Upper Los Angeles River Area Watermaster

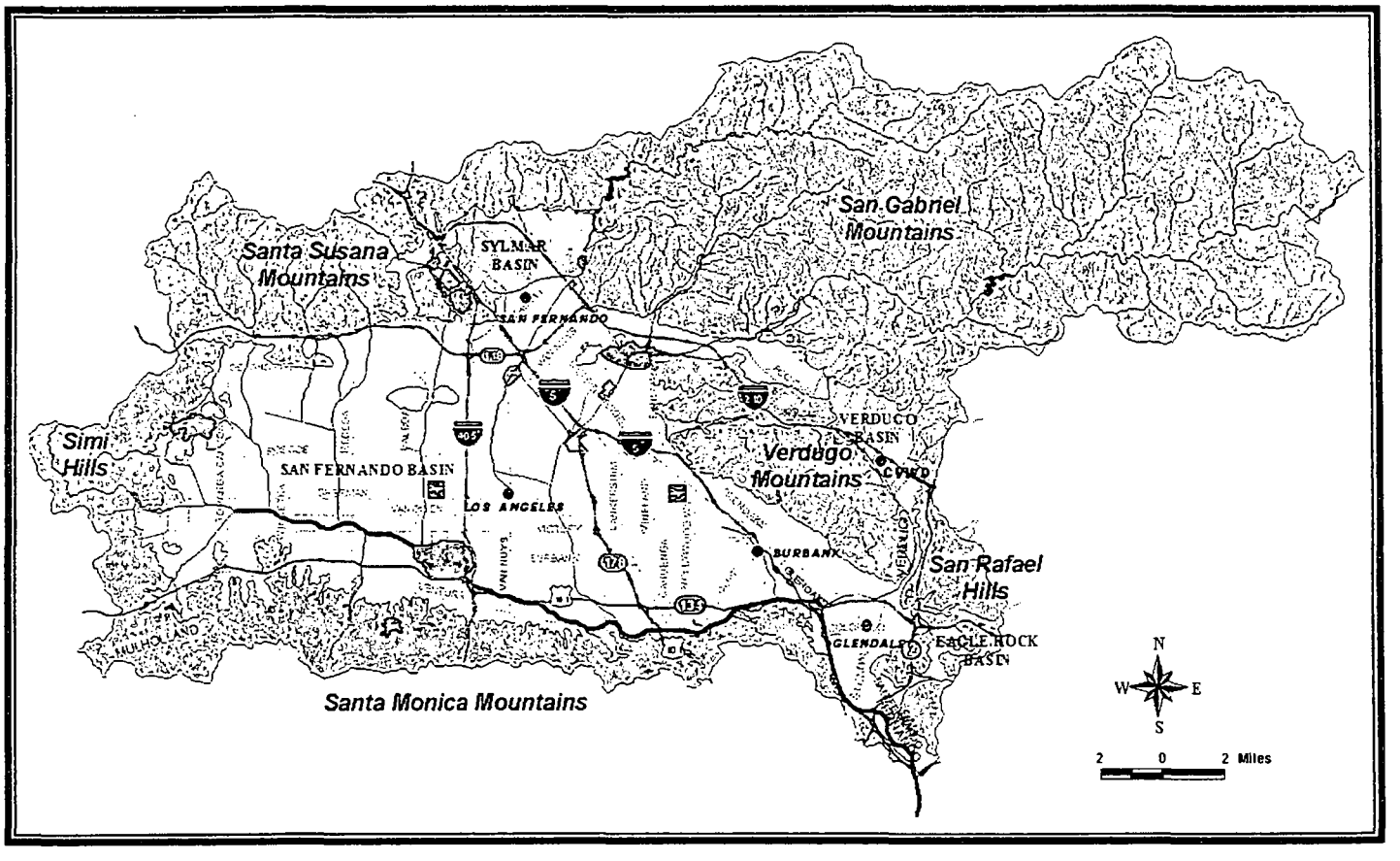
City of Los Angeles vs. City of San Fernando, et al.

Case No. 650079 – County of Los Angeles

WATERMASTER SERVICE
IN THE
UPPER LOS ANGELES RIVER AREA
LOS ANGELES COUNTY, CALIFORNIA

2005-06 WATER YEAR

OCTOBER 1, 2005 – SEPTEMBER 30, 2006



MAY 2007

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MAY 2007

FOREWORD

I am pleased to submit this annual Watermaster Report for the 2005-06 Water Year in accordance with the provisions of the Final Judgment dated January 26, 1979.

This report describes the water rights in each basin, and indicates the water in storage to the credit of each party as of October 1, 2006. In addition, this report includes background information on the history of the San Fernando case; information regarding each basin in ULARA with respect to water supply; groundwater extractions; groundwater levels; imported water use; recharge operations; water quality; and other pertinent information from the 2005-06 Water Year.

Our most significant long-term challenges continue to be the long-term decline in groundwater storage along with a growing accumulation of Stored Water Credits in the San Fernando Basin; and ongoing contamination of groundwater in the San Fernando Basin.

Although actual stored groundwater in the San Fernando Basin increased by 16,303 acre-feet due primarily to above-average artificial recharge and under-pumping by the City of Los Angeles, Stored Water Credits grew by nearly 40,000 acre-feet over the same period. Clearly, there is a significant difference between water rights conferred by the Judgment and the amount of actual water the basin can supply. The Watermaster will continue to discuss this issue with the Cities of Los Angeles, Burbank, and Glendale.

Groundwater contamination with volatile organic compounds (VOCs) continues to be a serious problem in the eastern San Fernando Basin. In addition, hexavalent chromium levels have increased significantly in some areas of the basin during the last Water Year. As of this writing, two production wells have been shut down due to excessive hexavalent chromium levels in Operable Units that treat the groundwater for VOCs. The Cities of Los Angeles, Burbank, and Glendale are seeking relief from enforcement agencies including the United States Environmental Protection Agency and the Los Angeles Regional Water Quality Control Board.

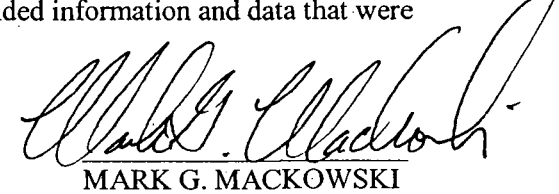
In the Verdugo Basin, MTBE levels have been increasing, threatening production wells belonging to the Crescenta Valley Water District.

The Watermaster performed a safe yield re-evaluation of the Sylmar Basin. As a result, the safe yield was increased from 6,510 acre-feet per year to 6,810 acre-feet per year, effective October 1, 2006.

To provide groundwater management for the ULARA basins, the Watermaster and the Administrative Committee met on a quarterly basis during 2005-06. As provided in Section 5.4 of the ULARA Policies and Procedures, the twelfth ULARA Groundwater Pumping and Spreading Plan was completed and filed with the Court in July 2006.

We welcome Mr. Mark Aldrian as a new member to the Administrative Committee from the City of Los Angeles.

Finally, I thank the Court and the Administrative Committee for their continued confidence and support as we continue to deal with serious issues of water supply and quality in ULARA. I also wish to acknowledge and thank the parties who have provided information and data that were essential to the completion of this report.



MARK G. MACKOWSKI
ULARA Watermaster

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1. INTRODUCTION

1.1 Background

The Upper Los Angeles River Area (ULARA) encompasses the entire watershed of the Los Angeles River and its tributaries above a point in the river designated as Los Angeles County Department of Public Works (LACDPW) Gaging Station F-57C-R, near the junction of the Los Angeles River and the Arroyo Seco (Plates 1 and 5). ULARA encompasses 328,500 acres, composed of 122,800 acres of valley fill, referred to as the groundwater basins, and 205,700 acres of tributary hills and mountains. ULARA is bounded on the north and northwest by the Santa Susana Mountains; on the north and northeast by the San Gabriel Mountains; on the east by the San Rafael Hills, which separate it from the San Gabriel Basin; on the south by the Santa Monica Mountains, which separate it from the Los Angeles Coastal Plain; and on the west by the Simi Hills.

ULARA has four distinct groundwater basins. The water supplies of these basins are separate and are replenished by deep percolation from rainfall, surface runoff and from a portion of the water that is delivered for use within these basins. The four groundwater basins in ULARA are the San Fernando, Sylmar, Verdugo, and Eagle Rock Basins.

THE SAN FERNANDO BASIN (SFB), the largest of the four basins, consists of 112,000 acres and comprises 91.2 percent of the total valley fill. It is bounded on the east and northeast by the San Rafael Hills, Verdugo Mountains, and San Gabriel Mountains; on the north by the San Gabriel Mountains and the eroded south limb of the Little Tujunga Syncline which separates it from the Sylmar Basin; on the northwest and west by the Santa Susana Mountains and Simi Hills; and on the south by the Santa Monica Mountains.

THE SYLMAR BASIN, in the northerly part of ULARA, consists of 5,600 acres and comprises 4.6 percent of the total valley fill. It is bounded on the north and east by the San Gabriel Mountains; on the west by a topographic divide in the valley fill between the Mission Hills and the San Gabriel Mountains; on the southwest by the Mission Hills; on the east by the bedrock of Saugus Formation along the east bank of the Pacoima Wash; and on the south by the eroded south limb of the Little Tujunga Syncline, which separates it from the SFB.

THE VERDUGO BASIN, north and east of the Verdugo Mountains, consists of 4,400 acres and comprises 3.6 percent of the total valley fill. It is bounded on the north by the San

Gabriel Mountains; on the east by a groundwater divide separating it from the Monk Hill Subarea of the Raymond Basin; on the southeast by the San Rafael Hills; and on the south and southwest by the Verdugo Mountains.

THE EAGLE ROCK BASIN, the smallest of the four basins, is in the extreme southeast corner of ULARA. It consists of 800 acres and comprises 0.6 percent of the total valley fill.

1.2 History of Adjudication

The water rights in ULARA were established by the JUDGMENT AFTER TRIAL BY COURT in Superior Court Case No. 650079, entitled The City of Los Angeles, a Municipal Corporation, Plaintiff, vs. City of San Fernando, et al., Defendants, signed March 14, 1968, by the Honorable Edmund M. Moor, Judge of the Superior Court. Numerous pretrial conferences were held subsequent to the filing of the action by the City of Los Angeles in 1955 and before the trial commenced on March 1, 1966.

On March 19, 1958, an Interim Order of Reference was entered by the Court directing the State Water Rights Board, now known as the State Water Resources Control Board (SWRCB), to study the availability of all public and private records, documents, reports, and data relating to a proposed order of reference in the case. The Court subsequently entered an "Order of Reference to State Water Rights Board to Investigate and Report upon the Physical Facts (Section 2001, Water Code)" on June 11, 1958.

A final Report of Referee was approved on July 27, 1962 and filed with the Court. The Report of Referee made a complete study of the geology, insofar as it affects the occurrence and movement of groundwater, and the surface and groundwater hydrology of the area. In addition, investigations were made of the history of channels of the Los Angeles River and its tributaries; the areas, limits, and directions of flow of all groundwater within the area; the historic extractions of groundwater in the basin and their quality; and all sources of water, whether they be diverted, extracted, imported, etc. The Report of Referee served as the principal basis for geological and hydrological facts for the original Trial Court Judgment in 1968, the Decision of the Supreme Court in 1975 (14 Cal 3d 199, 123 Cal Rept 1), and the Trial Court Final Judgment on remand on January 26, 1979.

The Trial Court issued its opinion on March 15, 1968. The City of Los Angeles filed an appeal from the Judgment of the Trial Court with the Court of Appeal, which held a hearing on November 9, 1972, and issued its opinion on November 22, 1972. The opinion prepared by Judge Compton and concurred in by Judges Roth and Fleming, reversed, with direction, the original judgment handed down by Judge Moor. In essence, the City of Los Angeles was given rights to all water in ULARA, including the use of the underground basins with some limited entitlements to others. The defendants, however, were given the right to capture "import return water", which is water purchased from the Metropolitan Water District of Southern California (MWD) that percolates into the basin.

A petition for rehearing was filed on December 7, 1972, but was denied by the Court of Appeal. On January 2, 1973, the defendants filed a petition for hearing with the State Supreme Court. The Court on March 2, 1973 advised the parties it would hear the case. The hearing began on January 14, 1975.

On May 12, 1975, the California Supreme Court filed its opinion on the 20-year San Fernando Valley water litigation. This opinion, which became final on August 1, 1975, upheld the Pueblo Water Rights of the City of Los Angeles to all groundwater in the SFB derived from precipitation within ULARA. The City of Los Angeles' Pueblo Water Rights were not allowed to extend to the groundwaters of the Sylmar and Verdugo Basins. However, all surface and groundwater underflows from these basins are a part of the Pueblo Waters.

The City of Los Angeles was also given rights to all SFB groundwater derived from water imported by it from outside ULARA and either spread or delivered within the SFB. The Cities of Glendale and Burbank were also given rights to all SFB groundwater derived from water that each imports from outside ULARA and delivered within ULARA. San Fernando was not a member of MWD until the end of 1971, and had never prior thereto imported any water from outside ULARA. San Fernando has no return flow rights based on a March 22, 1984 stipulation between Los Angeles and San Fernando.

The Supreme Court reversed the principal judgment of the Trial Court and remanded the case back to the Superior Court for further proceedings consistent with the Supreme Court's opinion. On remand the case was assigned to the Honorable Harry L. Hupp, Judge of the Superior Court of Los Angeles County.

The Final Judgment (Judgment), signed by the Honorable Harry L. Hupp, was entered on January 26, 1979. (Copies of the Judgment are available from the ULARA Watermaster Office.) The water rights set forth in the Judgment are generally consistent with the opinion of the Supreme Court as described above, with the exception of the provision regarding the calculation of Import Return Credit. Contrary to the Supreme Court opinion, in 1978 the Cities of Los Angeles, Burbank, and Glendale agreed to use all delivered water, instead of only imported water, in the calculation of Import Return Credit. This agreement among the Cities has had a significant adverse impact on storage in the San Fernando Basin (see Section 2.9).

In addition, the Judgment includes provisions and stipulations regarding water rights, storage of water, stored water credit, and arrangements for physical solution water for certain parties as recommended by the Supreme Court.

A separate stipulation was filed in Superior Court on January 26, 1979 appointing Melvin L. Blevins as Watermaster under the Judgment in this case. On September 1, 2003 Mark G. Mackowski was appointed Watermaster by the Superior Court, succeeding Mr. Blevins after 24 years of service.

On August 26, 1983, the Watermaster reported to the Court pursuant to Section 10.2 of the Judgment that the Sylmar Basin was in a condition of overdraft. In response to the Watermaster's letter and a Minute Order of the Court, the Cities of Los Angeles and San Fernando responded by letter to the Court, agreeing with the Watermaster's report on overdraft. On March 22, 1984, Judge Harry L. Hupp signed a stipulation ordering, effective October 1, 1984, that the Cities of Los Angeles and San Fernando would be limited in their pumping to bring the total pumping within the safe yield of the basin, including any rights exercised by private parties.

Pursuant to Judgment Section 8.2.10, in 1996 the Watermaster increased, on a temporary basis, the safe yield of the Sylmar Basin from 6,210 AF/Y to 6,510 AF/Y. On October 1, 2005 this temporary increase expired, and the Watermaster again re-evaluated the safe yield of the Sylmar Basin. Based on that re-evaluation, a recommendation was made in 2006 to increase the safe yield to 6,810 AF/Y (3,405 AF/Y for each City) subject to certain conditions and requirements, including the installation of monitoring wells to determine outflow from the basin and another safe yield re-evaluation

within five years. The Court approved the new stipulation after hearing on December 13, 2006.

The following table lists the judges who have succeeded Judge Hupp as Judge of Record for the San Fernando Judgment.

TABLE 1-1: JUDGES OF RECORD

Judge	Date Appointed
Susan Bryant-Deason	January 1, 1999
Ricardo A. Torres	January 1, 1993
Gary Klausner	December 9, 1991
Jerold A. Krieger	April 16, 1991
Sally Disco	May 25, 1990
Miriam Vogel	January 16, 1990
Vernon G. Foster	April 30, 1985

1.3 Extraction Rights

The extraction rights under the Judgment and Sylmar Basin Stipulation are as follows:

San Fernando Basin

Native Water

Los Angeles has an exclusive right to extract and utilize all the native safe yield water that has been determined to be an average of 43,660 acre-feet per year (AF/Y). This represents Los Angeles' Pueblo Water Right under the Judgment.

Import Return Water

Los Angeles, Glendale, and Burbank each have a right to extract the following amounts of groundwater from the San Fernando Basin.

Los Angeles: 20.8 percent of all delivered water, including reclaimed water, to valley fill lands of the SFB.

Burbank: 20.0 percent of all delivered water, including reclaimed water, to the SFB and its tributary hill and mountain areas.

Glendale: 20.0 percent of all delivered water, including reclaimed water, to the SFB and its tributary hill and mountain areas.

Physical Solution Water

Several parties are granted limited entitlement to extract groundwater chargeable to the rights of others upon payment of specified charges. Table 1-2 lists the parties and their maximum physical solution quantities.

TABLE 1-2: PHYSICAL SOLUTION PARTIES

Chargeable Party	Pumping Party	Allowable Pumping (acre-feet)
City of Los Angeles	City of Glendale	5,500
	City of Burbank	4,200
	Middle Ranch	50
	Hathaway	60
	Van de Kamp[1]	120
	Toluca Lake	100
	Sportsmen's Lodge	25
	Water Licenses	83
City of Glendale	Forest Lawn	400
	Angelica Healthcare[2]	75
City of Burbank	Valhalla	300
	Lockheed-Martin	25

1. Van de Kamp has never pumped its physical solution right.
2. Angelica Healthcare no longer pumps its physical solution rights.

Stored Water

Los Angeles, Glendale, and Burbank each have a right to store groundwater and the right to extract equivalent amounts.

Sylmar Basin

Native Water

The March 22, 1984 Stipulation assigned Los Angeles and San Fernando equal rights to the safe yield of the Sylmar Basin. On the recommendation of the Watermaster, on July 16, 1996, the Administrative Committee approved a temporary increase in the safe yield of the basin from 6,210 AF/Y to 6,510 AF/Y. The 10-year period ended on October 1, 2005, triggering a re-evaluation of the safe yield. The Stipulation approved by the Court December 13, 2006 allows for a temporary increase in the safe yield of the basin to 6,810 AF/Y beginning October 1, 2006.

The only potentially active private party with overlying rights within the Sylmar Basin is Santiago Estates, a successor to Meurer Engineering, M.H.C. Inc. Santiago Estates' pumping is deducted from the safe yield and the two cities divide the remainder. Santiago Estates has not pumped since the 1998-99 Water Year.

Stored Water

Los Angeles and San Fernando each have a right to store groundwater by in-lieu practices and the right to extract equivalent amounts.

Verdugo Basin

Native Water

Glendale and the Crescenta Valley Water District (CVWD) have appropriative and prescriptive rights to extract 3,856 and 3,294 AF/Y, respectively.

Import Return Water

Los Angeles may have a right to recapture delivered imported water in the basin upon application to the Watermaster and on subsequent order after hearing by the Court pursuant to Section 5.2.3.2 of the Judgment.

Stored Water

There are no storage rights in the Verdugo Basin.

Eagle Rock Basin

Native Water

The Eagle Rock Basin has a small native safe yield.

Imported Return Water

Los Angeles delivers imported water to lands overlying the basin, and return flow from this delivered water constitutes the majority of the safe yield of the basin. Los Angeles has the right to extract or allow to be extracted the safe yield of the basin.

Physical Solution Water

DS Waters (successor to Sparkletts and Deep Rock) has physical solution rights to extract groundwater pursuant to a stipulation with the City of Los Angeles, and as provided in Section 9.2.1 of the Judgment.

Stored Water

There are no storage rights in the Eagle Rock Basin.

1.4 Watermaster Service and Administrative Committee

In preparing the annual Watermaster Report, the Watermaster collected and reported all information affecting and relating to the water supply, water use and disposal, groundwater levels, water quality, and ownership and location of new production wells within ULARA. Groundwater pumpers report their extractions monthly to the Watermaster. This makes it possible to update the Watermaster Water Production Accounts on a monthly basis and determine the allowable pumping for the remainder of the year.

Section 8.3 of the Judgment established an Administrative Committee for the purpose of advising the Watermaster in the administration of his duties. The duly appointed members of the Committee, as of May 1, 2007, are:

BURBANK, CITY OF
Bill Mace (Vice-President)

GLENDALE, CITY OF
Peter Kavounas (President)
Raja Takidin (Alternate)

SAN FERNANDO, CITY OF
Ron Ruiz
Daniel Wall (Alternate)

LOS ANGELES, CITY OF
Thomas Erb
Mark Aldrian (Alternate)

CRESCENTA VALLEY WATER DISTRICT
Dennis Erdman
David Gould (Alternate)

The Watermaster may convene the Administrative Committee at any time in order to seek its advice. Each year the Committee is responsible for reviewing and approving with the Watermaster the proposed annual report. The Committee met in December, February, April, June, and September of the 2005-06 Water Year. The Committee approved the 2005-06 Watermaster Report on April 25, 2007.

1.5 Significant Events through April 2007

Burbank Operable Unit (BOU)

The BOU, operated by Burbank under a contract with ECO Resources, Inc., and funded by Lockheed-Martin, removes volatile organic compounds (VOCs) from groundwater. The City of Burbank, in cooperation with USEPA and Lockheed-Martin, continued with design and operational changes to make the facility mechanically reliable at the design capacity of 9,000 gallons per minute (gpm). During the 2005-06 Water Year 10,108 AF of groundwater were treated at the BOU. Burbank also reduces the levels of hexavalent chromium in its treated groundwater by blending with imported supplies from MWD before delivery to the City of Burbank.

In 2004-05 the USEPA gave approval to modify the vapor-phase granular activated carbon (GAC) vessels. Modifications to the vapor-phase GAC vessels are expected to be completed in September 2007.

Montgomery Watson Harza (MWH) was hired by Burbank to perform a Well Field Performance Attainment Study that evaluated the well field and related facilities in an effort to increase production to 9,000 gpm. Recommendations included drilling additional wells and deflating packers in existing wells. The USEPA is reviewing the study.

Glendale Operable Unit (GOU)

The GOU removes VOCs and has the capability of treating up to 5,000 gpm from the Glendale North and South OU Well Fields. Treated water is blended with imported MWD supplies to reduce nitrate and hexavalent chromium levels. The GOU treated 6,777 AF during the 2005-06 Water Year.

In an effort to control hexavalent chromium levels, the GOU operates under an interim pumping plan approved by the USEPA that varies from the original Consent Decree. The interim plan allows reduced pumping from high-chromium wells, and increased pumping from low-chromium wells.

Well GN-3 experienced a damaged well screen in March 2005 during routine maintenance. The well was repaired in July 2006, but persistent high bacteria levels delayed placing the well into service until October 2006.

Several GOU wells, including GN-3, are experiencing increasing hexavalent chromium levels. Discharges into the Los Angeles River are limited to 11 parts per billion (ppb) of hexavalent chromium. This NPDES discharge limit presents a serious obstacle to ongoing operation and maintenance of the GOU.

Glendale has continued to pursue an aggressive research program to identify large-scale treatment technologies for the removal of hexavalent chromium. A Phase III study by McGuire Malcolm Pirnie was presented to an expert panel in October 2006 that identified two promising technologies: weak-base anion exchange, and reduction-coagulation-filtration. The expert panel recommended further study of the weak-base anion process to gain a better understanding of the adsorptive mechanism on a molecular level. Unit costs of these technologies are being evaluated, and funding is being secured to implement treatment on one or more high-chromium GOU wells.

North Hollywood Operable Unit (NHOU)

LADWP's NHOU, funded in part by a USEPA Consent Decree, is designed to remove VOCs at a rate of 2,000 gpm using a system of seven extraction wells and an air-stripping tower. The 15-year Consent Decree expired on December 31, 2004. The USEPA has stated that there are sufficient funds to continue operation and maintenance of the NHOU into 2009. However, the remedy did not perform as expected, and some VOCs have been detected at nearby LADWP well fields. In addition, hexavalent chromium levels have increased significantly in one of the NHOU wells. The USEPA, LADWP, and the Watermaster are currently evaluating additional treatment and funding alternatives. A total of 1,766 AF were treated during the 2005-06 Water Year.

Pollock Wells Treatment Plant

LADWP's Pollock Wells Treatment Plant uses three wells and four liquid-phase GAC vessels to remove VOCs at a design rate of 3,000 gpm. The primary purpose of the facility is to prevent the loss of groundwater through the Los Angeles River Narrows due to rising groundwater outflow. An evaluation of the Pollock area was performed in 1990 that showed an average of approximately 2,000 AF/Y of excess rising groundwater occurring in the Los Angeles river Narrows as a result of delivered water, precipitation, and percolation along the unlined portion of the river within the Narrows area. This is part of Los Angeles' water right, and it is lost from the SFB in the absence of pumping at the Pollock Wells.

During Water Year 2005-06 a total of 2,442 AF of groundwater was pumped and treated.

Verdugo Park Water Treatment Plant

The City of Glendale Verdugo Park Water Treatment Plant treats groundwater from the Verdugo Basin for turbidity and bacteria, and is operating significantly below the expected rate of 700 gpm. Methods to increase the treatment rate are being investigated. A total of 250 AF were treated in the 2005-06 Water Year. The City is not able to reach the treatment capacity for the VPWTP due to the lack of production capacity from the two Verdugo wells that were constructed in 1990. The reduced treatment rate may be causing an increase in rising groundwater leaving the Verdugo Basin (see Table 2-3).

Glenwood Nitrate Removal Plant

CVWD's Glenwood Nitrate Removal Plant treated 997 AF during the 2005-06 Water Year. The amount of treated water is 127 percent more than the previous year due to the continuing impact of above-average rainfall in 2004-05 which enabled CVWD to increase its pumping.

Verdugo Basin Evaluation

In June 2003 CVWD obtained an AB 303 grant to determine the cause(s) of the decline in Verdugo Basin groundwater levels, develop alternatives to reverse the decline, enhance conjunctive use of the basin, and reduce CVWD's reliance on imported supplies. The Watermaster and the City of Glendale serve on the Technical Advisory Committee. A final report was completed in May 2005 that identified several possible sites at which artificial storm water recharge can be performed. In October 2005 CVWD began the Verdugo Basin Geophysical Evaluation Project to guide CVWD in the selection of sites for future supply wells and recharge facilities. This study was completed in June 2006. Both studies were funded with AB 303 grants.

CVWD Over-Pumping in the Verdugo Basin

During the 2004-05 Water Year CVWD pumped a total of 3,310 AF, which was 16 AF above its adjudicated right of 3,294 AF/Y. The Watermaster encouraged the CVWD and Glendale to negotiate an agreement regarding the over-pumping.

On February 21, 2006, after failing to reach agreement with Glendale, CVWD formally requested the Watermaster's retroactive approval for its 2004-05 over-pumping. The Watermaster denied the request and suggested CVWD and Glendale continue to attempt to reach agreement regarding the over-pumping.

In July 2006 CVWD informed the Watermaster that it would again exceed its adjudicated water right during the 2005-06 Water Year. The Watermaster again recommended that CVWD contact Glendale to request permission to pump a portion of Glendale's water right. Glendale requested CVWD not to over-pump unless it was willing to pay for the over-pumping in both the 2004-05 and 2005-06 Water Years.

The San Fernando Judgment enjoins both CVWD and Glendale from pumping in excess of their water rights in the Verdugo Basin (Judgment, Sections 6.4 and 6.7). However, parties may pump each other's unused water rights with permission of the Watermaster (Policies and Procedures Section 2.3.4). The Watermaster did not grant permission to CVWD to over-pump in either 2004-05 or 2005-06 Water Years because Glendale had expressed its intention to increase its production capacity in the Verdugo Basin in the near future. Glendale believes that over-pumping by CVWD may impair its ability to pump its right in the future and requested that the groundwater remain in the basin unless CVWD was willing to pay for it. Contrary to requests by Glendale and the Watermaster, in 2005-06 CVWD again over-pumped its right by 58 AF.

Fortunately, CVWD and Glendale reached a settlement over the past over-pumping before the issue went to court. The Watermaster thanks the parties for their efforts to reach a negotiated settlement and encourages them to reach an agreement on future over-pumping to avoid unnecessary legal conflicts.

Mission Well Field Rehabilitation

LADWP has accrued 9,528 AF of Stored Water Credit in the Sylmar Basin as of October 1, 2006. The Watermaster has expressed concern over this and has recommended that LADWP begin pumping some of these credits. Currently, the Mission Well Field is incapable of pumping LADWP's annual water right due primarily to problems with the existing tank. LADWP has responded by expediting the design and installation of a new tank, wells, and appurtenant facilities. The final Scope of Work is scheduled to be completed in April 2007, and the new tank should be completed by March 2008. At that time, LADWP should be able to begin pumping some of its stored credits. The new

wells are scheduled to be installed by approximately 2010 which will provide additional pumping capacity.

Reclamation Projects in the San Fernando Valley

LADWP has plans to connect large recycled water customers over the next three years including the Hansen Dam Recreation Area, Valley Generating Station, and the Sepulveda Basin in the southern portion of the Valley. LADWP plans to begin a stakeholder process to study the options to maximize the use of recycled water in the city.

Hansen Area Water Reclamation Project Phase I consists of approximately one-half mile of 30-inch pipeline and a 7-million gallon storage tank. The primary purpose of this project is to deliver recycled water to the Valley Generating Station for cooling tower and other industrial uses. The project is scheduled to be in service in late spring 2007.

The Hansen Area Water Reclamation Project Phase II will consist of a booster pumping station adjacent to the proposed 7-million gallon recycled water storage tank at the Valley Generating Station, and a pipeline extending to the Hansen Dam Recreation Area and other areas.

The Sepulveda Basin Water Recycling project is designed to provide recycled water for irrigation throughout the Sepulveda Basin Recreation Area including Woodley Golf Course, Lake Balboa Recreation Area, Wildlife Area, Balboa and Encino Golf Courses, Balboa Sports Center, and Hjelte Park. The City of Los Angeles received a permit from the RWQCB in January 2007 allowing non-potable uses including irrigation in the Sepulveda Basin, such as at the Woodley Golf Course.

Headworks

The Headworks Spreading Grounds is the site of multi-objective projects to improve water quality, provide the community with an opportunity for passive recreation, and restore a portion of the wetlands along the Los Angeles River. LADWP has completed its preliminary studies and the Environmental Impact Report for the Silver Lake Reservoir Complex Storage Replacement Project (SLRC SRP). The SLRC SRP will allow LADWP to comply with the Long Term 2 Enhanced Surface Water Treatment Rule and the Stage 2 Disinfectants and Disinfection Byproducts Rule that were recently promulgated by the

USEPA. The SLRC SRP will remove Silver Lake and Ivanhoe Reservoirs from service as potable water reservoirs and transfer regulatory storage to a buried 110 million gallon reservoir to be constructed at the Headworks Spreading Grounds site. A new hydroelectric power plant will be constructed as part of this project that will provide approximately four megawatts of green power.

A second project under consideration at the Headworks Spreading Grounds site is a joint effort between the United States Army Corps of Engineers and LADWP to develop wetlands on a portion of the site. This project is currently undergoing a feasibility analysis.

San Fernando Basin Recharge Task Force

In 2004 the Watermaster formed the San Fernando Basin Recharge Task Force in an effort to increase spreading of native water in the SFB. The Task Force includes LADWP, LACDPW, and Watermaster. The goal of the task force is to identify ways to capture and infiltrate more rainfall runoff. The group is considering several projects including: enlargement of the Hansen Spreading Grounds; maximizing recharge at the County-operated spreading grounds; the Big Tujunga Dam Seismic Retrofit Project; the Sheldon-Arleta Landfill Methane Control Project; and the Tujunga Watershed Groundwater Recharge Master Plan.

Hansen Spreading Grounds

Vulcan Materials Company and LACDPW are negotiating an agreement for the sale of gravel to Vulcan as part of the enlargement proposal of the Hansen Spreading Grounds. The Hansen Spreading Grounds final design is due in February 2007 with construction in the summer of 2007. During construction the HSG will be shut down for extended periods.

Big Tujunga Dam Seismic Rehabilitation

The Big Tujunga Dam captures and regulates storm flows from the upper watershed of Tujunga Wash to minimize flood damage and to conserve and infiltrate stormwater runoff into the SFB. The regulated flows also benefit endangered species downstream, such as the Santa Ana Sucker.

Several years ago the dam was analyzed for structural stability during a large earthquake. Based on that analysis, it was determined that the dam required retrofitting

to bring it up to modern seismic safety standards. The latest cost estimate for the seismic retrofit is approximately $78 million. This project was bid in March 2007 and will take approximately three years to complete.

Sheldon Arleta Landfill Methane Control Project (Tujunga Spreading Grounds Task Force)

The use of Tujunga Spreading Grounds (TSG) has been significantly reduced in above-normal runoff years because of environmental issues associated with methane gas migration from the adjacent Sheldon-Arleta Landfill. When runoff is spread at TSG it compresses the air in the underlying soil and forces methane out of the landfill and into the surrounding neighborhood.

In May 1998 the Watermaster initiated the Tujunga Spreading Grounds Task Force to restore historic recharge capacity; enhance methane gas control and monitoring; and improve storm water management. The goal is to restore recharge capacity of TSG from the current limit of 100 cfs to its historic level of 250 cfs. The Task Force consisted of representatives of LACDPW, LADWP, City of Los Angeles Bureau of Sanitation, and the Watermaster. Since then the work of the Tujunga Spreading Grounds Task Force has been incorporated into the San Fernando Basin Recharge Task Force.

An improved landfill gas collection system has been designed and bids were accepted by the City of Los Angeles Bureau of Sanitation Department of Public Works. The contract was awarded on December 22, 2006.

Standard Urban Stormwater Mitigation Plan (SUSMP)

The Regional Water Quality Control Board adopted SUSMP on March 8, 2000. It requires some new developments and redevelopments to contain or treat the first ¾ inch of rainfall runoff from every storm, and encourages on-site infiltration. The Watermaster encourages runoff infiltration, but is concerned over water quality issues related to contaminated surface runoff. For the past several years we have been monitoring water quality data from several demonstration sites (see Water Augmentation Study, below) and have determined that infiltration in residential and light commercial areas can be safely accomplished under certain conditions. The Watermaster is currently working with the City of Los Angeles Watershed Protection Division to allow infiltration if those criteria are met.

Sun Valley Watershed Committee

The Watermaster Office is a stakeholder on the Sun Valley Watershed Committee. The objective of the group is to identify alternative ways to solve the local flooding problems in the Sun Valley area. These alternatives could replace or augment the traditional approach of an improved storm drain system. Some of the alternatives include on-site infiltration of storm runoff and the acquisition of gravel pits for conversion into spreading basins. Some storm runoff contains contaminants that are potentially adverse to water quality in the basin. The Watermaster is concerned about potential impacts to groundwater quality as well as conflicts with established water rights, but is working closely with the committee to resolve these issues. An infiltration gallery at Sun Valley Park was completed in 2006, and additional infiltration projects are being constructed or are in the design phase.

Water Augmentation Study (WAS)

The Los Angeles and San Gabriel Rivers Watershed Council has developed a WAS to determine the feasibility of infiltrating urban runoff to reduce local flooding, recharge groundwater, and reduce surface water pollution. The Watermaster serves on the Technical Advisory Committee and provides guidance with respect to water quality and water rights within ULARA. The WAS now has six demonstration sites throughout the greater Los Angeles area where it infiltrates urban stormwater and monitors the effects on underlying groundwater. These demonstration sites have given us a better understanding of the effects on groundwater quality, and an increased level of confidence in the use of urban runoff to augment recharge of our local aquifers.

Integrated Resources Plan (IRP)

The IRP is Los Angeles' plan to integrate its wastewater, storm water, potable water, and reclaimed water programs for the next 20 years. Phase I, the Integrated Plan for Wastewater Program, emphasized community outreach to help direct the program and was completed in 2001. The goal of Phase II is to develop and implement the program. The IRP uses a broader "watershed" approach to promote more efficient use of all water within the City. The Watermaster serves on the Management Advisory Committee and guides the process with respect to water rights and water quality within ULARA.

Los Angeles River Revitalization Master Plan

In 2002, Councilman Ed Reyes led efforts to establish the Los Angeles City Council Ad Hoc Committee on the Los Angeles River to function as a clearinghouse for Los Angeles

River projects, to encourage community involvement in Los Angeles River improvements, and to help coordinate Los Angeles River-related projects within the City.

One of the initiatives by the Ad Hoc River Committee is the Los Angeles River Revitalization Master Plan. As a result of the Ad Hoc River Committee's efforts, and with funding from the Los Angeles Department of Water and Power, the City of Los Angeles Department of Public Works-Bureau of Engineering issued a Request for Proposals in 2005 for the preparation of a Revitalization Master Plan which would identify proposals that would make the Los Angeles river a "front door" to the City, and support a multitude of civic activities.

The 18-month planning process evaluated improvements in the project area. In February 2007 the draft Programmatic Environmental Impact Report/Programmatic Environmental Impact Statement (PEIR/PEIS) was released for public review.

Integrated Regional Water Management Plan (IRWMP)

The County of Los Angeles has been organized into five sub-regions to more efficiently and effectively develop proposals to request Proposition 50 and Proposition 84 funds for the region. The sub-regional districts are: North Santa Monica Bay Watershed; Upper San Gabriel River and Rio Hondo River Watersheds; Upper Los Angeles River Watershed; Lower San Gabriel and Los Angeles River Watersheds; and South Bay Watershed. The sub-regions had until January 1, 2007 to adopt the IRWMP for submission to the State.

Dewaterers

The groundwater table in parts of the SFB is near the ground surface. Dewatering is occasionally required to maintain subsurface structures. If dewatering is needed, the dewaterer is required to meter the discharge and enter into an agreement with the affected party for payment for the pumped water. The Watermaster Office currently receives reports from several dewaterers in the SFB.

Water Licenses

Portions of ULARA located in unincorporated Los Angeles County are without water service. Working in cooperation with the County Department of Health Services and County Planning, the Watermaster and LADWP have developed a process to identify

and monitor water usage through a water license agreement. The agreements allow the use of groundwater on overlying property until a water service becomes available, establish maximum annual groundwater usage, and require the monthly reporting of groundwater production to the Watermaster Office and annual payment to the City of Los Angeles.

1.6 Summary of Water Supply, Operations, and Hydrologic Conditions

Highlights of operations for the 2004-05 and 2005-06 Water Years are summarized in Table 1-3. Details of the 2005-06 Water Year operations and hydrologic conditions are provided in Section 2. Locations of the groundwater basins, water service areas of the parties and individual producers, and other pertinent hydrologic facilities are shown on Plates 2 through 8.

Average Rainfall

Precipitation on the valley floor area during the 2005-06 Water Year was 16.46 inches, 100 percent of the calculated 100-year mean (16.48 inches). Precipitation in the mountain areas was 19.56 inches, 90 percent of the calculated 100-year mean (21.76 inches). The weighted average of 17.42 inches is 89 percent of the 100-year mean (19.64 inches).

Spreading Operations

A total of 44,615 AF of water were spread. This represents a significant increase from the average annual spreading of native water for the 1968-2006 period of 32,666 AF.

Extractions

Total extractions amounted to 70,340 AF. This is a decrease of 7,655 AF from 2004-05, and less than the 1968-2006 average of 97,675 AF. Of the total for the 2005-06 Water Year, 2,427 AF were for non-consumptive use. Appendix A contains a summary of groundwater extractions for the 2005-06 Water Year.

Imports

Gross imports (including pass-through water) totaled 547,390 AF, a decrease of 3,617 AF from 2004-05. Net imports used within ULARA amounted to 312,445 AF, a 457 AF increase from 2004-05.

Exports

A total of 270,924 AF were exported from ULARA. Of the 270,924 AF exported, 35,979 AF were from groundwater extractions, and 234,945 AF were from imported supplies (pass-through).

Treated Wastewater

A total of 81,159 AF of wastewater were treated in ULARA. The majority of the treated water was discharged to the Los Angeles River, a portion was delivered to the Hyperion Treatment Plant, and approximately 7 percent was used as recycled water.

Recycled Water

Total recycled water used in ULARA was 7,577 AF, a 178 AF increase from last year. The recycled water is used for landscape irrigation, in-plant use, power plant use (i.e. cooling), and other industrial uses.

Sewage Export

Sewage export was estimated at 101,366 AF; this was the amount of untreated sewage delivered by pipeline to the Hyperion Treatment Plant. The estimate does not include treated wastewater discharged to the Los Angeles River that leaves ULARA as surface flow.

Groundwater Storage

Groundwater storage increased in the SFB during 2005-06 by 16,303 AF with the total cumulative increase in groundwater storage since October 1, 1968 of 167,198 AF. The SFB storage increased due primarily to the effect of reduced pumping by the City of Los Angeles. The calculated change in groundwater storage for the Sylmar, Verdugo, and Eagle Rock Basins was +279, +1,491, and +43 AF, respectively.

Wells

During the 2005-2006 Water Year no new municipal wells were drilled or destroyed. Forest Lawn Cemetery destroyed Well No. 2 (3947A) and drilled replacement Well No. 8 (3947M). DS Waters, a successor to Deep Rock under the Judgment, destroyed Well Nos. 1,2,3 and 4 in February 2007.

TABLE 1-3: SUMMARY OF OPERATIONS IN ULARA

Item	Water Year 2004-05	Water Year 2005-06
Active Pumpers (parties and nonparties)	31	32
Inactive Pumpers (parties)[1]	7	7
Valley Rainfall, in inches		
Valley Floor	42.64	16.46
Mountain Area	47.54	19.56
Weighted Average	45.66	17.42
Spreading Operations, in acre-feet	74,198	44,615
Extractions, in acre-feet		
Used in ULARA	32,836	34,361
Exported from ULARA	45,159	35,979
Total	**77,995**	**70,340**
Gross Imports, in acre-feet		
Los Angeles Aqueduct Water	335,617	366,512
MWD Water	215,390	180,878
Total	**551,007**	**547,390**
Exports, in acre-feet		
Los Angeles Aqueduct Water	168,898	175,530
MWD Water	70,121	59,415
Groundwater	45,159	35,979
Total	**284,178**	**270,924**
Net Imports Used in ULARA, in acre-feet	311,988	312,445
Recycled Water Use, in acre-feet	7,399	7,577
Total Water Use in ULARA, in acre-feet [2]	5,643	354,383
Treated Wastewater, in acre-feet [3]	87,498	81,159
Sewage Export to Hyperion, in acre-feet [4]	104,768	101,366

1. The seven inactive pumpers are Van de Kamp, Disney, Angelica, Santiago Estates, Greeff, Sears, Waste Management.
2. Extractions used in ULARA plus Net Imports and Recycled Water.
3. Most treated wastewater flows to LAR, a portion to Hyperion (see T2-7), and for recycled water.
4. Sewage outflow includes estimates of outflow from each of the four basins, and discharges to Hyperion from the Tillman and Los Angeles-Glendale Water Reclamation Plants.

1.7 Allowable Pumping for the 2006-07 Water Year

Table 1-4 shows a summary of extraction rights for the 2006-07 Water Year and Stored Water Credit as of October 1, 2006, for the Cities of Los Angeles, Burbank, Glendale, San Fernando, and the CVWD. The calculation of these values is shown in more detail in Section 2.

TABLE 1-4: ALLOWABLE PUMPING 2006-07 WATER YEAR
(acre-feet)

	Native Safe Yield Credit [1]	Import Return Credit [2]	Total Native + Import	Stored Water Credit [3] (as of Oct. 1, 2006)	Allowable Pumping 2006-07 Water Year
San Fernando Basin					
City of Los Angeles	43,660	42,994	86,654	374,091	460,745
City of Burbank	—	4,817	4,817	13,999	18,816
City of Glendale	—	5,705	5,705	61,833	67,538
Total	43,660	53,516	97,176	449,923	547,099
Sylmar Basin					
City of Los Angeles	3,405	—	3,405	9,528	12,933
City of San Fernando	3,405	—	3,405	737	4,142
Total	6,810	—	6,810	10,265	17,075
Verdugo Basin					
CVWD	3,294	—	3,294	—	3,294
City of Glendale	3,856	—	3,856	—	3,856
Total	7,150	—	7,150	—	7,150

1) Native Safe Yield extraction right per Judgment, page 11.
2) Import Return extraction right per Judgment, page 17.
3) There is no Stored Water Credit assigned in Verdugo Basin.

2. WATER SUPPLY, OPERATIONS, AND HYDROLOGIC CONDITIONS

2. WATER SUPPLY, OPERATIONS, AND HYDROLOGIC CONDITIONS

2.1 Precipitation

Precipitation varies considerably throughout ULARA depending on topography and elevation. Mean seasonal precipitation ranges from about 14 inches at the western end of the San Fernando Valley to 33 inches in the San Gabriel Mountains. Approximately 80 percent of the annual rainfall occurs from December through March.

In the 2005-06 Water Year the valley floor received 16.46 inches of rain (100 percent of the 100-year mean), while the mountain area received 19.56 inches (90 percent of the 100-year mean). Figure 2.1 shows monthly valley floor and mountain area rainfall in ULARA. The weighted average of both valley and mountain areas was 17.42 inches (89 percent of the 100-year mean). Table 2-1 shows a record of rainfall at the valley and mountain precipitation stations, and Plate 5 shows their locations.

FIGURE 2.1: MONTHLY RAINFALL

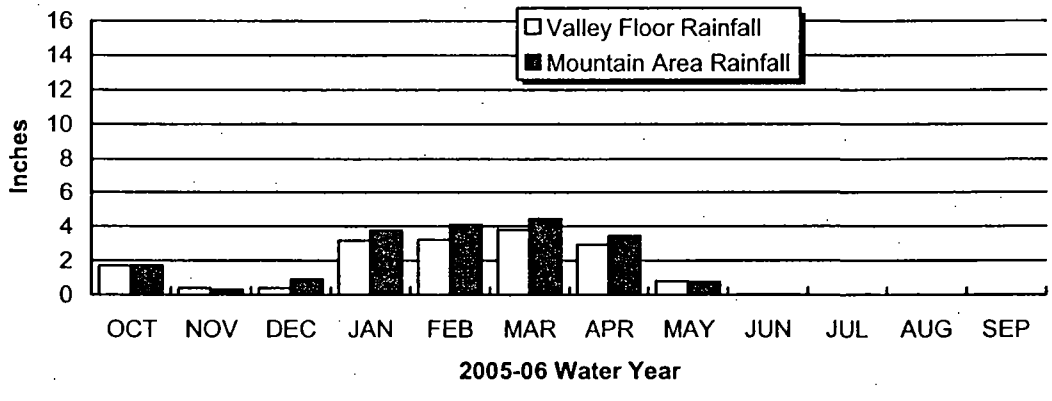


TABLE 2-1: 2005-2006 PRECIPITATION

(inches)

LACDPW Rain Gage Stations No.	Name	2005-06 Precipitation	100-Year Mean (1881-1981)	Percent of 100-Year Mean
	Valley Stations			
13C	North Hollywood-Lakeside	16.41	16.63	99%
1087D	Green Verdugo Pumping Plant	16.18	14.98	108%
465C	Sepulveda Dam	16.08	15.30	105%
21B	Woodland Hills	15.15	14.60	104%
23B	Chatsworth Reservoir	14.59	15.19	96%
25C	Northridge-LADWP	14.32	15.16	94%
251C	La Crescenta	22.61	23.31	97%
293B	Los Angeles Reservoir	16.60	17.32	96%
	Weighted Average[1]	**16.46**	**16.48**	**100%**
	Mountain Stations			
11D	Upper Franklin Canyon Reservoir	19.33	18.50	104%
17	Sepulveda Canyon at Mulholland	19.28	16.84	114%
33A	Pacoima Dam	17.50	19.64	89%
47D	Clear Creek - City School	31.12	33.01	94%
53D	Monte Cristo Ranger Station	26.01	29.04	90%
54C	Loomis Ranch-Alder Creek	16.10	18.62	86%
210C	Brand Parks	13.74	19.97	69%
797	DeSoto Reservoir	15.61	17.52	89%
1074	Little Gleason	22.52	21.79	103%
	Weighted Average[1]	**19.56**	**21.76**	**90%**
	Weighted Average Valley/Mountain Areas[1]	**17.42**	**19.64**	**89%**

1. Weighted Average calculations performed according to Report of Referee-7/62. Mountain Station Weighted Average estimated due to incomplete data.

2.2 Runoff and Outflow from ULARA

The watershed of ULARA contains 328,500 acres, of which 205,700 acres are hills and mountains. The drainage system is made up of the Los Angeles River and its tributaries. Surface and sub-surface flow originates as runoff from the hills and mountains, runoff from the impervious areas of the valley, industrial and sanitary waste discharges, domestic irrigation runoff, and rising groundwater.

A number of stream-gaging stations are maintained throughout ULARA, either by the LACDPW or the United States Geological Survey (USGS). The Watermaster has selected six key gaging stations which record runoff from the main hydrologic areas in ULARA (Plate 5 shows the location of the stations). The six gaging stations are as follows:

1. Station F-57C-R registers all surface outflow from ULARA.

2. Station F-252-R registers flow from Verdugo Canyon which includes flows from Dunsmore and Pickens Canyons.

3. Station E-285-R registers flow from the westerly slopes of the Verdugo Mountains and some flow from east of Lankershim Boulevard. It also records any releases of reclaimed wastewater discharged by the City of Burbank.

4. Station F-300-R registers all flow east of Lankershim Boulevard plus the portion of outflow from Hansen Dam which is not spread. These records also include flow through the Sepulveda Dam.

5. Station F-168-R registers all releases from Big Tujunga Dam, which collects runoff from the watershed to the northeast. Runoff below this point flows to Hansen Dam.

6. Station F-118B-R registers all releases from Pacoima Dam. Runoff below this point flows to the Los Angeles River through lined channels, or can be diverted to the Lopez and Pacoima Spreading Grounds.

Table 2-2 summarizes the 2004-05 and 2005-06 monthly runoff for these stations. The mean daily discharge rates for these six stations during 2005-06 are summarized in Appendix B.

TABLE 2-2: MONTHLY RUNOFF AT SELECTED GAGING STATIONS

(acre-feet)

Station	Water Year	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
F-57C-R	2004-05	35,240	7,590	52,290	162,600	143,800	49,620	15,550	7,410	8,140	7,410	5,660	5,120	**500,430**
L.A. River Arroyo Seco	2005-06	10,550	7,130	8,550	22,080	24,370	22,450	21,950	12,450	6,950	7,500	6,430	6,350	**156,760**
F-252-R	2004-05	3,650	512	3,400	9,450	10,970	3,700	1,210	836	771	960	827	786	**37,072**
Verdugo Wash	2005-06	1,280	871	1,520	1,950	1,420	1,770	1,480	879	760	857	747	597	**14,131**
E-285-R	2004-05	3,160	917	3,880	7,100	8,270	2,340	1,240	839	1,650	1,320	1,070	1,040	**32,826**
Burbank Storm Drain	2005-06	1,290	1,050	1,260	1,850	2,060	2,050	1,810	1,380	968	847	682	595	**15,842**
F-300-R	2004-05	23,430	8,630	40,390	142,600	125,700	41,630	13,250	4,140	6,840	4,420	5,000	5,000	**421,030**
L.A. River Tujunga Ave.	2005-06	8,690	6,170	5,870	16,020	15,690	19,690	19,460	6,220	4,070	4,230	3,940	3,660	**113,710**
F-168-R	2004-05	1,210	3,420	8,480	46,480	28,170	21,810	7,130	4,160	5,680	2,960	2,230	256	**131,986**
Big Tujunga Dam	2005-06	292	652	475	1,570	1,050	3,150	4,520	1,260	511	168	118	55	**13,821**
F-118B-R	2004-05	3	384	235	5,930	6,500	6,320	1,240	2,180	1,610	1,150	0	0	**25,552**
Pacoima Dam	2005-06	41	222	146	624	5	1,370	3,200	2,090	343	65	125	0	**8,231**

2.3 Components of Surface Flow

The surface flow of the Los Angeles River at Gaging Station F-57C-R consists of:

1. Storm flows;
2. Treated wastewater from the Tillman, Burbank, and Los Angeles-Glendale Water Reclamation Plants;
3. Industrial discharges and domestic irrigation runoff; and,
4. Rising groundwater.

In the Report of Referee (Volume II, Appendix O), procedures were developed for the calculation of rising groundwater for the period 1928-1958. Some of the important factors of that study are no longer significant - releases of Owens River water, operation of the Chatsworth Reservoir, and operation of the Headworks Spreading Grounds. As shown on Figure O-2 of the Report of Referee, excess rising groundwater was considered to have fallen to zero by the late 1950s. The January 1993 report by Brown and Caldwell, "Potential Infiltration of Chlorides from the Los Angeles River Narrows into the Groundwater Aquifer" studied groundwater levels along the course of the Los Angeles River. The Watermaster provided the insight and data for this evaluation. As of the end of the drought period in 1977, groundwater levels in the Los Angeles River Narrows were very low, with very little potential for excess rising groundwater. Heavy runoff occurred during the 1978-83 period, which, combined

with reduced pumping in the Crystal Springs, Grandview, and Pollock Well Fields, caused large recoveries of groundwater levels in the Los Angeles River Narrows.

Another significant factor affecting hydrologic conditions in the Los Angeles River Narrows has been the increasing releases of treated wastewater. Releases from the Los Angeles-Glendale Plant began in 1976-77 and from the Tillman Plant in 1985-86. These large year-round releases tend to keep the alluvium beneath the Los Angeles River saturated, even in dry years. Nevertheless, there is some opportunity for continuing percolation in the unlined reach, both upstream and downstream of the lined section near the confluence of the Verdugo Wash and the Los Angeles River. Water percolating in the unlined reach is believed to circulate through shallow zones and re-appears as rising groundwater downstream from Los Feliz Boulevard. Also, there is up to 3,000 AF of recharge from delivered water within the Los Angeles Narrows-Pollock Well Field area that adds to the rising groundwater conditions.

Rising groundwater also occurs above the Verdugo Wash Narrows, and in the unlined reach of the Los Angeles River upgradient from Gage F-57C-R. Outflow at Gage F-57C-R includes rising groundwater leaving the Verdugo Basin past Gage F-252-R (Table 2-3). In 2005-06 rising water at Gage F-252-R was estimated at 1,414 AF. For 2005-06 the total rising groundwater flow at Gage F-57C-R was estimated at 5,441 AF.

Field inspection during 1998-99 confirmed significant year-round unmetered flows of domestic irrigation runoff from residences, golf courses and other sites through the Sycamore Channel and several other tributaries upstream of Gage F-57C-R.

Finally, the methodology used to calculate rising groundwater (Table 2-3) needs to be improved. Over the years, many of the gaging stations in the Los Angeles River and its tributaries have been lost or abandoned. Actual data from these gaging stations have been replaced by estimates, with the flow model used to check the results. While the current methodology provides an approximation, it is much less precise than using actual flow data.

In March 2007 the ULARA Administrative Committee requested the Watermaster to develop a study to improve the calculation of rising groundwater leaving the San Fernando Basin.

TABLE 2-3: ESTIMATED SEPARATION OF SURFACE FLOW AT STATIONS F-57C-R & F-252-R

(acre-feet)

Water Year	F-57C-R Rising Groundwater[1]	F-57C-R Waste Discharge	F-57C-R Storm Runoff	F-57C-R Total Outflow	F-252-R Rising Groundwater[2,3]	F-252-R Storm Runoff[3]	F-252-R Total Outflow
2005-06	5,441	74,256	77,063	156,760	1,414	12,717	14,131
2004-05	6,309	70,828	423,293	500,430	5,198	31,874	37,072
2003-04	3,330	90,377	42,153	135,860	2,468	2,851	5,319
2002-03	3,869	75,159	106,862	185,890	3,167	5,183	8,350
2001-02	2,126	74,737	43,937	120,800	1,819	5,721	7,540
2000-01	3,000	91,795	94,065	188,860	1,500	6,370	7,870
1999-00	1,980	78,009	62,202	142,190	824	4,243	8,470
1998-99	2,000	72,790	39,110	113,900	1,000	2,534	7,250
1997-98	4,000	97,681	245,079	346,730	4,000	12,140	16,140
1996-97	3,000	75,827	76,485	155,312	3,000	13,860	16,860
1995-96	3,841	86,127	61,188	151,156	2,577	10,946	13,523
1994-95	4,900	66,209	367,458	438,567	4,809	28,881	33,696
1993-94	2,952	60,594	73,149	136,695	1,387	6,156	7,543
1992-93	4,900	77,000	478,123	560,023	3,335	20,185	23,520
1991-92	3,000	120,789	197,040	320,829	1,412	13,209	14,621
1990-91	3,203	75,647	117,779	196,629	1,157	6,865	8,022
1989-90	3,000	76,789	55,811	167,639	1,182	2,938	4,120
1988-89	3,000	80,020	56,535	136,843	1,995	4,453	6,448
1987-88	3,000	81,920	74,074	156,204	3,548	10,493	14,041
1986-87	3,000	64,125	19,060	83,295	2,100	1,690	3,790
1985-86	3,880	48,370	102,840	155,090	2,470	6,270	8,740
1984-85	3,260	21,600	46,300	71,160	2,710	3,970	6,680
1983-84	3,000	17,780	49,090	69,870	4,000	n/a	n/a
1982-83	3,460	17,610	384,620	405,690	5,330	21,384	26,714
1981-82	1,280	18,180	80,000	99,460	3,710	5,367	9,077
1980-81	4,710	19,580	51,940	76,230	5,780	2,917	8,697
1979-80	5,500	16,500	n/a	n/a	5,150	7,752	12,902
1978-79	2,840	16,450	119,810	139,100	2,470	n/a	n/a
1977-78	1,331	7,449	357,883	366,663	1,168	23,571	24,739
1976-77	839	7,128	58,046	66,013	1,683	2,635	4,318
1975-76	261	6,741	32,723	39,725	2,170	2,380	4,550
1974-75	427	7,318	56,396	64,141	1,333	4,255	5,588
1973-74	2,694	6,366	79,587	88,878	1,772	5,613	7,385
1972-73	4,596	8,776	100,587	113,959	1,706	7,702	9,408
1971-72	—	—	—	—	2,050	2,513	4,563
Average	3,014	51,067	122,154	176,289	2,571	8,198	10,787

1. Includes the influence of treated waste water.
2. Includes the influence of declining capacity at Verdugo Park Treatment Plant.
3. Includes influence of dry weather runoff and perennial stream flow.

The Tillman Waste Water Treatment Plant began operating in September 1985.

2.4 Groundwater Recharge

Precipitation has a direct influence on groundwater recharge and, with some delay, groundwater storage. Urban development in ULARA has resulted in a significant portion of the rainfall being collected and routed into lined channels that discharge into the Los Angeles River. To partially offset the increased runoff due to urbanization, Pacoima, Big Tujunga and Hansen Dams, originally built for flood control, are utilized to regulate storm flows and allow recapture of a portion of the flow in downstream spreading basins operated by the LACDPW and the City of Los Angeles.

The LACDPW operates the Branford, Hansen, Lopez, and Pacoima Spreading Grounds. The LACDPW, in cooperation with the City of Los Angeles, operates the Tujunga Spreading Grounds. The spreading grounds are primarily used for spreading native water. Table 2-4 summarizes the spreading operations for the 2005-06 Water Year, Table 2-4A summarizes recharge since the 1968-69 Water Year, and Plate 8 shows the locations of the spreading grounds.

TABLE 2-4: 2005-2006 SPREADING OPERATIONS IN THE SAN FERNANDO BASIN
(acre-feet)

Agency	Spreading Facility	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LACDPW														
	Branford	76	21	51	54	76	82	43	60	25	31	29	28	576
	Hansen	1,240	1,680	981	2,890	544	3,220	4,420	2,320	1,264	831	784	666	20,840
	Lopez	0	88	68	0	0	0	316	277	153	9	47	0	958
	Pacoima	225	0	133	848	470	1,550	2,790	1,330	0	0	0	0	7,346
	Tujunga	117	198	612	1,113	1,974	4,781	5,034	810	153	50	36	17	14,895
	Total	**1,658**	**1,987**	**1,845**	**4,905**	**3,064**	**9,633**	**12,603**	**4,797**	**1,595**	**921**	**896**	**711**	**44,615**
City of Los Angeles														
	Tujunga	0	0	0	0	0	0	0	0	0	0	0	0	0
	Headworks	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Basin Total	**1,658**	**1,987**	**1,845**	**4,905**	**3,064**	**9,633**	**12,603**	**4,797**	**1,595**	**921**	**896**	**711**	**44,615**

TABLE 2-4A: ANNUAL SPREADING OPERATIONS IN THE SAN FERNANDO BASIN
1968-69 through 2005-06
(acre-feet)

Water Year	Los Angeles County Department of Public Works (Native)						City of Los Angeles (Imported)			GRAND TOTAL	Rainfall Weighted Average Valley/Mtns.
	Branford	Hansen	Lopez	Pacoima	Tujunga	TOTAL	Headworks	Tujunga	TOTAL		
2005-06	576	20,840	958	7,346	14,895	44,615	0	0	0	44,615	17.42
2004-05	1,448	33,301	940	17,394	21,115	74,198	0	0	0	74,198	45.66
2003-04	444	6,424	144	1731	1322	10,065	0	0	0	10,065	12.21
2002-03	932	9,427	518	3,539	1,914	16,330	0	0	0	16,330	21.22
2001-02	460	1,342	0	761	101	2,664	0	0	0	2,664	6.64
2000-01	562	11,694	172	3,826	1,685	17,939	0	0	0	17,939	22.29
1999-00	468	7,487	578	2,909	2,664	14,106	0	0	0	14,106	16.77
1998-99	547	8,949	536	696	3,934	14,662	0	0	0	14,662	10.83
1997-98	641	28,129	378	20,714	11,180	61,042	0	77	77	61,119	38.51
1996-97	415	9,808	724	5,768	6,406	23,121	0	51	51	23,172	17.65
1995-96	345	8,232	363	4,532	7,767	21,239	0	0	0	21,239	14.48
1994-95	585	35,137	1,086	14,064	18,236	69,108	0	0	0	69,108	33.08
1993-94	462	12,052	182	3,156	4,129	19,981	0	0	0	19,981	11.86
1992-93	389	26,186	1,312	17,001	19,656	64,544	114	0	114	64,658	41.26
1991-92	653	15,461	1,094	12,914	9,272	39,394	230	0	230	39,624	32.39
1990-91	509	11,489	241	3,940	2,487	18,666	52	0	52	18,718	7.69
1989-90	327	2,029	90	1,708	0	4,154	0	0	0	4,154	9.55
1988-89	255	3,844	308	1,306	0	5,713	0	0	0	5,713	9.72
1987-88	352	17,252	1,037	4,520	0	23,161	0	0	0	23,161	21.36
1986-87	0	7,311	141	467	0	7,919	0	33	33	7,952	7.70
1985-86	290	18,188	1,735	6,704	0	26,917	0	1,433	1,433	28,350	23.27
1984-85	244	13,274	104	3,375	0	16,997	0	5,496	5,496	22,493	13.31
1983-84	213	10,410	0	3,545	0	14,168	0	24,115	24,115	38,283	11.18
1982-83	883	35,192	1,051	22,972	10,580	70,678	10	32,237	32,247	102,925	46.07
1981-82	345	14,317	243	5,495	0	20,400	3,853	0	3,853	24,253	20.16
1980-81	245	14,470	335	3,169	0	18,219	4,652	9,020	13,672	31,891	12.89
1979-80	397	31,087	1,097	15,583	0	48,164	5,448	19,931	25,379	73,543	33.66
1978-79	295	24,697	1,018	12,036	0	38,046	2,463	31,945	34,408	72,454	24.07
1977-78	2,142	28,123	445	20,472	12,821	64,003	3,200	18,247	21,447	85,450	44.84
1976-77	377	2,656	63	1,943	0	5,039	3,142	16	3,158	8,197	16.02
1975-76	470	3,128	562	1,308	0	5,468	3,837	5,500	9,337	14,805	14.20
1974-75	681	5,423	915	2,476	0	9,495	4,070	9,221	13,291	22,786	---
1973-74	672	6,287	946	2,378	0	10,283	6,205	0	6,205	16,488	---
1972-73	1,271	9,272	0	6,343	2,274	19,160	5,182	0	5,182	24,342	---
1971-72	161	1,932	0	1,113	0	3,206	7,389	0	7,389	10,595	---
1970-71	507	11,657	727	4,049	0	16,940	6,804	399	7,203	24,143	---
1969-70	674	11,927	0	1,577	2,380	16,558	11,021	0	11,021	27,579	---
1968-69	461	32,464	893	14,262	13,052	61,132	6,698	3,676	10,374	71,506	---
AVG.	545	14,497	551	6,766	4,418	26,776	1,957	4,247	6,204	32,981	

2.5 Groundwater Extractions

The original Trial Court adjudication of groundwater rights in ULARA restricted all groundwater extractions, effective October 1, 1968. On that date, total annual extractions in ULARA were restricted to the safe yield of approximately 104,040 AF/Y. This amounted to a reduction of approximately 50,000 AF from the previous six-year average. The State Supreme Court's opinion, as implemented on remand in the Judgment dated on January 26, 1979, restricts groundwater pumping within each basin, and by each party within each basin.

Figure 2.2 illustrates the imported water used in ULARA and annual groundwater extractions, beginning with the 1954-55 Water Year. It can be noted that for the 14 years prior to pumping restrictions (1954-55 to 1967-68), extractions exceeded imports by 50,000 to 90,000 AF/Y, in contrast to the past 38 years (1968-69 to 2005-06) where imports have exceeded extractions by 110,000 to 250,000 AF/Y.

A total of 70,340 AF were pumped from ULARA during the 2005-06 Water Year: 59,375 AF from the SFB; 5,032 AF from the Sylmar Basin; 5,744 AF from the Verdugo Basin; and 190 AF from the Eagle Rock Basin. The respective extraction rights for the 2005-06 Water Year were 96,838 AF (Native Safe Yield of 43,660 plus an import return credit of 53,178 AF) for the SFB; 6,510 AF for the Sylmar Basin; and 7,150 AF for the Verdugo Basin. Appendix A contains a summary of groundwater extractions for the 2005-06 Water Year, Plate 8 shows the locations of the well fields, and Plate 11 illustrates the pattern of groundwater extractions.

Of the total amount pumped in the SFB (59,375 AF), 55,523 AF constitutes extractions by Parties to the Judgment; 2,427 AF constitutes nonconsumptive use; and 1,424 AF were used for physical solutions, groundwater cleanup, testing/well development, and dewatering parties (Appendix E). Table 2-5 summarizes 2005-06 private party pumping in the SFB, and Plate 3 shows the locations of the individual producers.

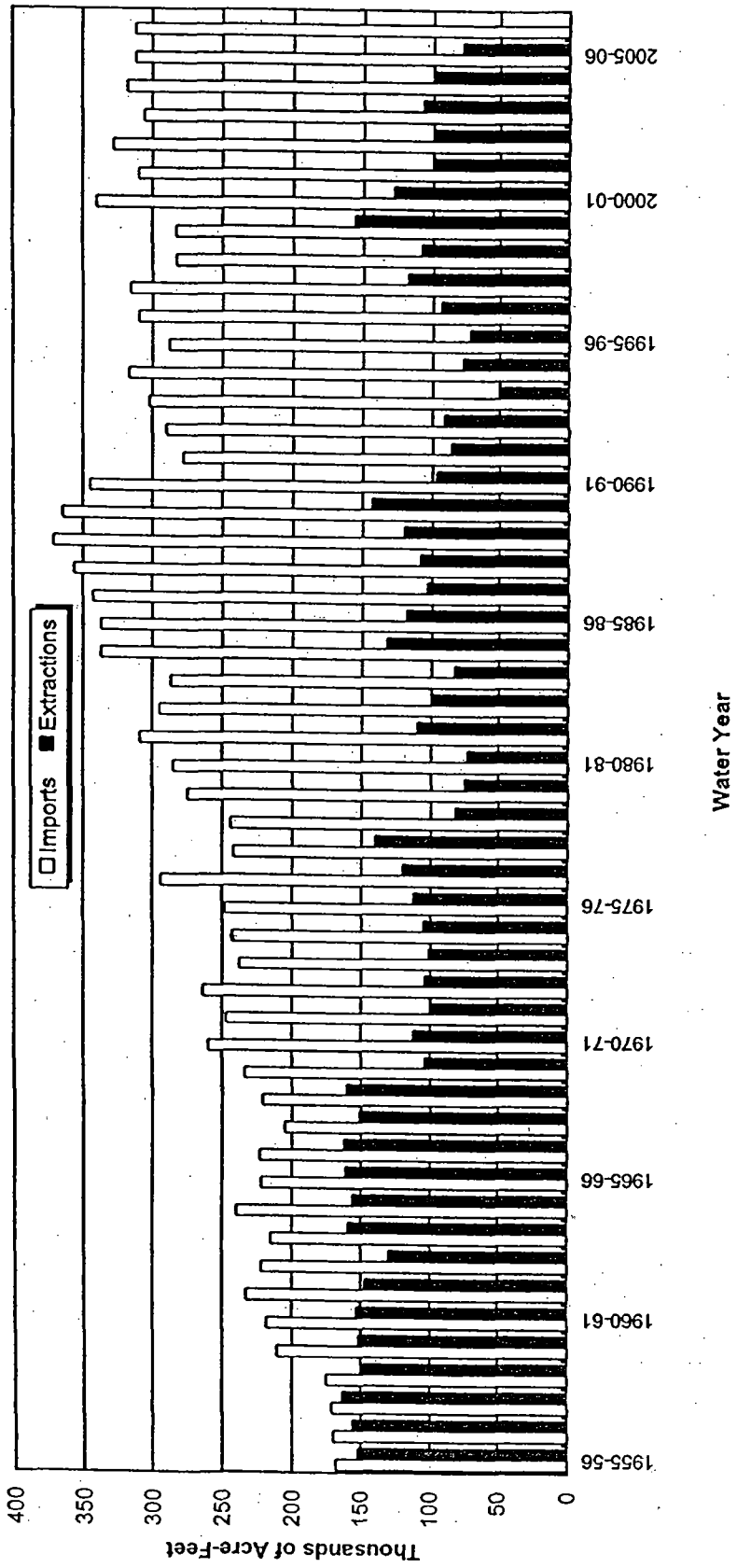


FIGURE 2.2 - YEARLY IMPORTS USED IN ULARA AND TOTAL ULARA EXTRACTIONS

TABLE 2-5: 2005-06 PRIVATE PARTY PUMPING - SAN FERNANDO BASIN

(acre-feet)

Nonconsumptive Use or Minimal Consumption		Groundwater Dewatering	
CalMat	2,426.40	Auto Stiegler	13.73
(Gravel washing)		(Charged to Los Angeles' water rights)	
Sears, Roebuck and Company	0	Avalon Encino	0.19
(Air Conditioning; well disconnected 2000)		(Charged to Los Angeles' water rights)	
Sportsmens' Lodge	0.07	First Financial Plaza Site	36.28
Toluca Lake Property Owners	0.35	(Charged to Los Angeles' water rights)	
Walt Disney Productions	0	Trillium Corporation	35.64
(3 wells inactive/ Not abandoned.)		(Charged to Los Angeles' water rights)	
		Metropolitan Transportation Agency	47.49
		(Charged to Los Angeles' water rights)	
		Metropolitan Water District (MWD) Jensen	218.70
		(Charged to Los Angeles' water rights)	
		North East Interceptor Sewer	0.00
		(Charged to Los Angeles' water rights)	
		Warner Properties Plaza 6 and 3	31.72
		(Charged to Los Angeles' water rights)	
Total	**2,426.82**	**Total**	**383.75**
Groundwater Cleanup		**Physical Solution**	
Boeing Santa Susana Field Lab	0.00	Forest Lawn Cemetery Assn.	442.88
(Charged to Los Angeles' water rights)		(Charged to Glendale's water rights)	
Home Depot U.S.A. In.c	3.25	Hathaway (deMille)	41.34
(Charged to Burbank's water rights)		(Charged to Los Angeles' water rights)	
Raytheon (Hughes)	0.30	Middle Ranch (deMille)	8.12
(Charged to Los Angeles' water rights)		(Charged to Los Angeles' water rights)	
B.F.Goodrich (Menasco/Coltec)	0.39	Toluca Lake Property Owners	30.00
(Charged to Burbank's water rights)		(Charged to Los Angeles' water rights)	
Micro Matics USA, Inc.	2.44	Valhalla Memorial Park	430.85
(Charged to Los Angeles' water rights)		(Charged to Burbank's water rights)	
Mobil Oil Corporation	0.00	Waterworks District No. 21	13.12
(Charged to Los Angeles' water rights)		(Charged to Los Angeles' water rights)	
3M-Pharmaceutical	62.42	Water Licenses	0.42
(Charged to Los Angeles' water rights)		(Charged to Los Angeles' water rights)	
Tesoro	0.90	Wildlife Waystation	4.36
(Charged to Los Angeles' water rights)		(Charged to Los Angeles' water rights)	
Total	**69.70**	**Total**	**971.09**
Total Extractions	**3,851**		

2.6 Imports and Exports of Water

Residential, commercial, and industrial expansions in ULARA have required the importation of additional water supplies to supplement that provided by the groundwater basins.

The imported supplies to ULARA are from the Los Angeles Aqueducts and the MWD. Los Angeles Aqueduct water consists of runoff from the Eastern Sierra Nevada and groundwater from Owens Valley. The MWD supplies consist of State Water Project and Colorado River Aqueduct waters.

Exports from ULARA include imported Los Angeles Aqueduct and MWD water (pass-through), and groundwater from the SFB. Exports of wastewater are by pipeline to Hyperion Treatment Plant.

Table 2-6 summarizes the imports and exports from ULARA during the 2004-05 and 2005-06 Water Years, and Figure 2.3 shows the monthly extractions and imports.

FIGURE 2.3 - TOTAL MONTHLY EXTRACTIONS AND GROSS IMPORTS

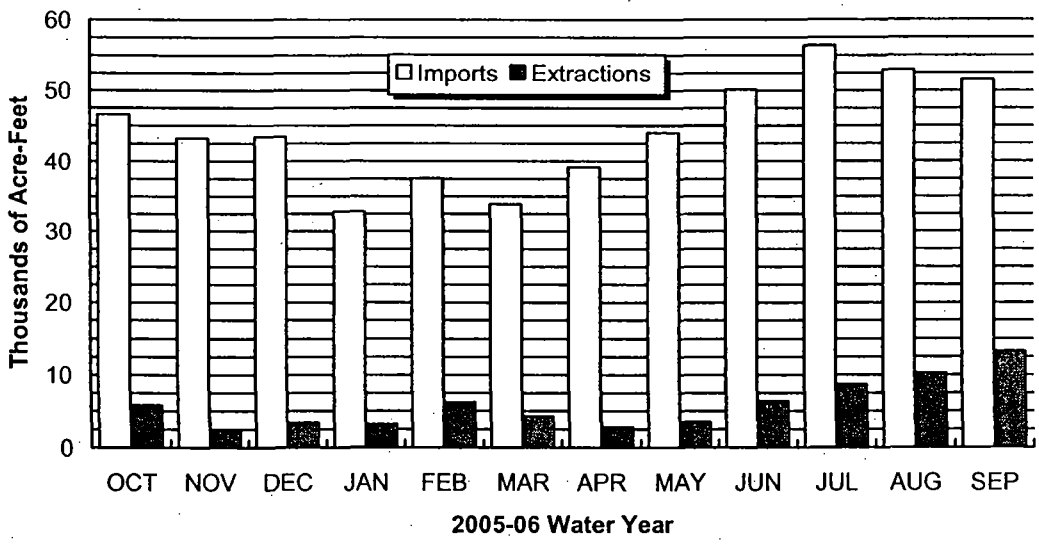


TABLE 2-6: ULARA WATER IMPORTS AND EXPORTS

(acre-feet)

Source and Agency	Water Year 2004-05	Water Year 2005-06
Gross Imported Water		
Los Angeles Aqueduct		
City of Los Angeles	335,617	366,512
MWD Water		
City of Burbank	14,415	11,880
Crescenta Valley Water District	1,909	2,080
City of Glendale	21,233	22,709
City of Los Angeles [1]	168,687	133,959
La Canada Irrigation District [1]	1,197	1,244
Las Virgenes Municipal Water District [1]	7,449	8,204
City of San Fernando	500	802
MWD Total	**215,390**	**180,879**
Grand Total	**551,007**	**547,391**
Exported Water (Pass-Through)		
Los Angeles Aqueduct		
City of Los Angeles	168,898	175,530
MWD Water		
City of Los Angeles	70,121	59,415
Total	**239,019**	**234,945**
Net Imported Water	**311,988**	**312,446**

1. Deliveries to those portions of these agency service areas that are within ULARA.

2.7 Water Recycling

Water recycling presently provides a source of water for irrigation, industrial, and recreational uses. In the future, water recycling may provide water for groundwater recharge. Four wastewater reclamation plants are in operation in ULARA. The Las Virgenes Municipal Water District operates a water recycling facility outside ULARA but uses part of the treated water in ULARA. Table 2-7 summarizes the 2005-06 reclamation plant operations, and Plate 5 shows their locations.

TABLE 2-7: 2005-06 WASTEWATER RECYCLING OPERATIONS

(acre-feet)

Plant/Agency	Treated Water	Recycled Water Use	Recycled Water Use (%)	Recycled Water Delivered to SFB
City of Burbank	8,870	1,692 [1]	19%	1,692
Los Angeles-Glendale	18,204	3,635 [2]	20%	---
Los Angeles		2,526		13
Glendale		1,109		961
Donald C. Tillman	60,574	616 [3]	1%	0
The Independent Order of Foresters	N/R	N/R [4]		
Las Virgenes MWD		1,634		1,634
Total	**87,648**	**7,577**		**4,299**

1. Of the total recycled water (1,691.86 AF), 1,025.45 AF was delivered to the Burbank power plant. 666.41 AF was used by CalTrans, DeBell Golf Course and other landscape irrigation.
2. Of the total recycled water (3,635 AF), 1,109 AF was delivered to Glendale for use in Glendale's Power Plant and for irrigation water for CalTrans, Forest Lawn and Brand Park; 962 AF was for in plant use; 744 AF was delivered to Griffith Park by Los Angeles for irrigation; and 821 AF was used by CalTrans, Lake Side, Mt. Sinai Memorial Park, Forest Lawn 2, and Universal City MCA for irrigation.
3. Recycled water was for in plant use and then discharged to the Los Angeles River.
4. Recycled water is used for irrigation. N/R no response for 2005-06.

2.8 Water Level Elevations

The 2006 contour maps for the Spring (April) and the Fall (September) were produced by using the SFB Groundwater Flow Model. The SFB model was initially developed during the Remedial Investigation (RI) study of groundwater contamination in the San Fernando Valley. The RI study was funded through the EPA's Superfund program.

The model is comprised of up to four layers in the deepest portion of the eastern SFB, and includes 22,016 cells, ranging in size from 1,000 by 1,000 feet to 3,000 by 3,000 feet. The model parameters were calibrated by matching the simulated hydraulic-head fluctuations with the historical water level fluctuations measured at selected key monitoring wells for a 10-year period. The 2006 contours were estimated by incorporating the actual monthly recharge (e.g. spread water, precipitation, etc.) and discharge (groundwater extractions, rising groundwater, etc.) values for the 2005-06 Water Year as model input. The model was then run to simulate the actual operations in the San Fernando Basin during the period October 2005 to September 2006. The simulated head values (estimated groundwater elevations) at the end of the month of April and September of the 2005-06 Water Year were then plotted by utilizing groundwater contouring software.

The simulated Spring and Fall 2006 Groundwater Contour Maps are shown as Plates 9 and 10. These contours are intended to depict the general trend of groundwater flow for April and September 2006. Up-to-date groundwater elevations for specific locations can be obtained by contacting the Watermaster's Office at (213) 367-0921.

Plate 11 exhibits the change in groundwater elevation from the Fall of 2005 to the Fall of 2006. The minor increase in groundwater levels in the north portion of the SFB, specifically near the Hansen Spreading Grounds, is attributed to the 20,840 AF of Native runoff water spread at Hansen. The groundwater levels in the vicinity of Pacoima Spreading Grounds show a minor increase by about 10 feet from the previous year. The water spread at Pacoima during the 2005-06 Water Year was 7,346 AF and the water spread during the 2004-05 was 17,394 AF.

The 20-30 foot recovery in groundwater levels near the Rinaldi-Toluca and North Hollywood Well Field areas is primarily attributed to above-normal recharge in upgradient spreading grounds and the low volume of groundwater extractions. Extractions from these two major well fields has been low for the last two water years. Extractions during the Water Year of 2005-06 were only 21,671 AF and during 2004-05 were 22,972 AF compared to the extraction during 2003-04 of 40,652 AF. The area near the Tujunga Well Field shows an increase in

groundwater levels, as much as 20 feet, due to the recharge in upgradient spreading grounds including Tujunga Spreading Grounds and also due to reduced pumping at the Tujunga Well Field by about 7,946 AF from 2004-05 to 2005-06 (15,807 AF vs. 7,861 AF). The vicinity of the Burbank Operable Unit (BOU) shows an increase in groundwater levels of approximately 10 feet as a result of above-normal recharge in the basin and reduced pumping at upgradient well fields (Rinaldi-Toluca, Tujunga and North Hollywood West). Extraction from the upgradient well fields decreased by about 24 percent between 2004-05 and 2005-06 (38,779 AF vs. 29,534 AF). In general, the SFB shows a rebound in groundwater levels as a result of low pumping, and above-normal artificial recharge for the second year in a row.

Figure 2.4 shows historic well hydrographs of wells throughout ULARA and their locations.

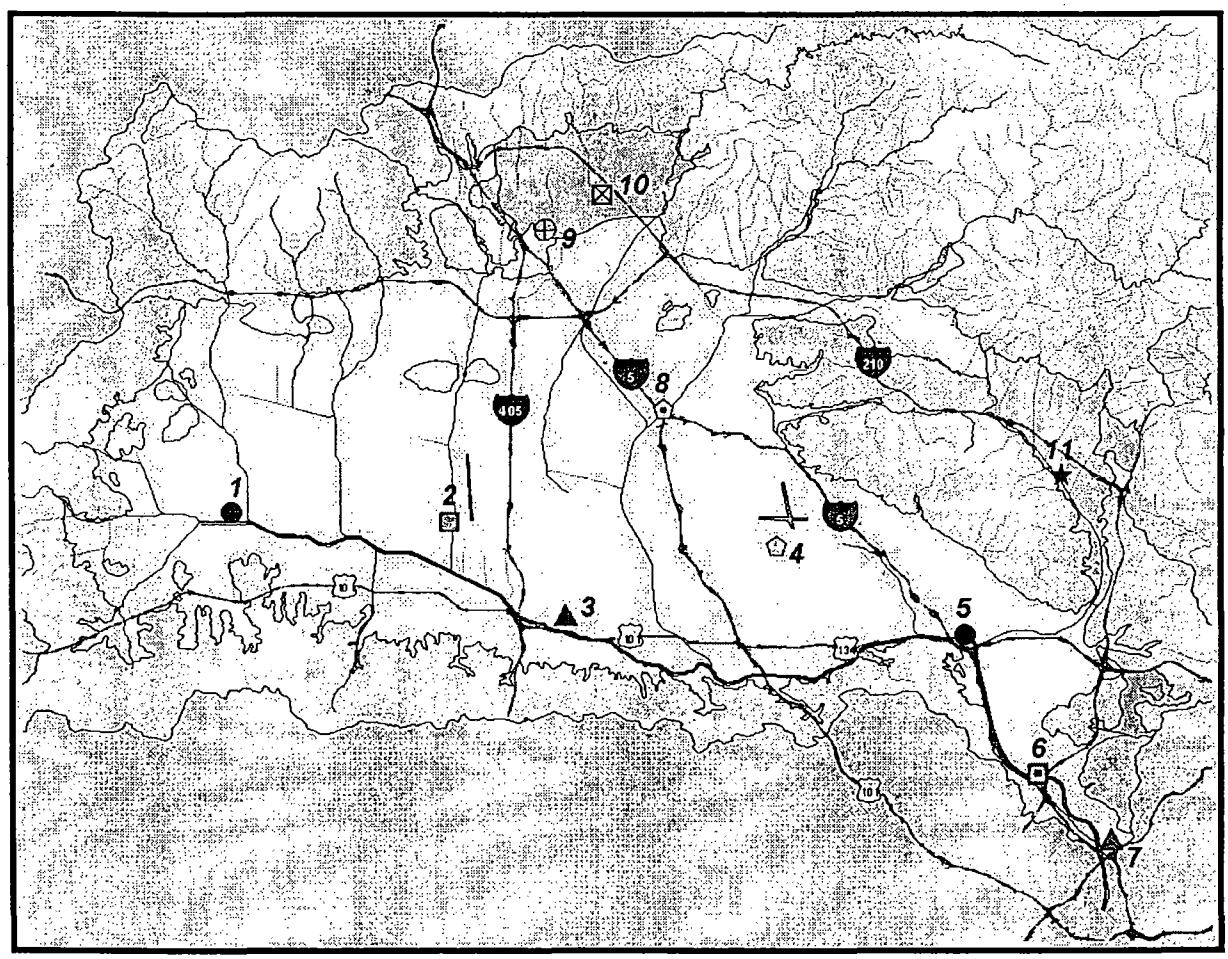
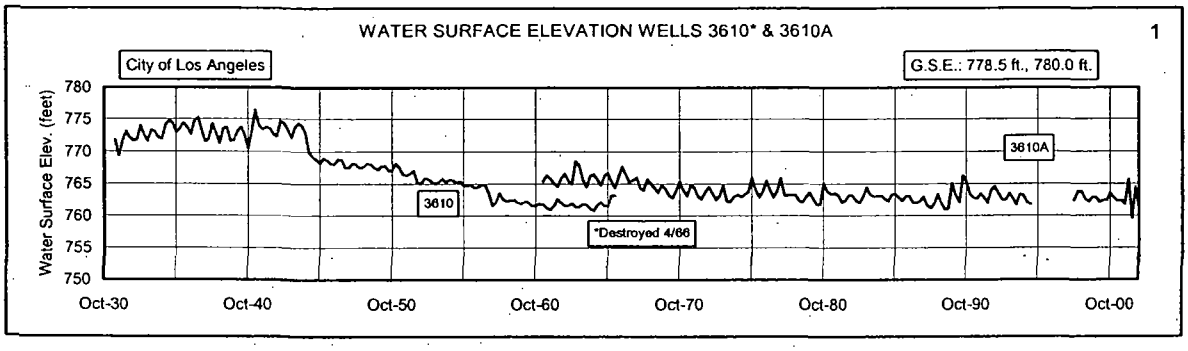
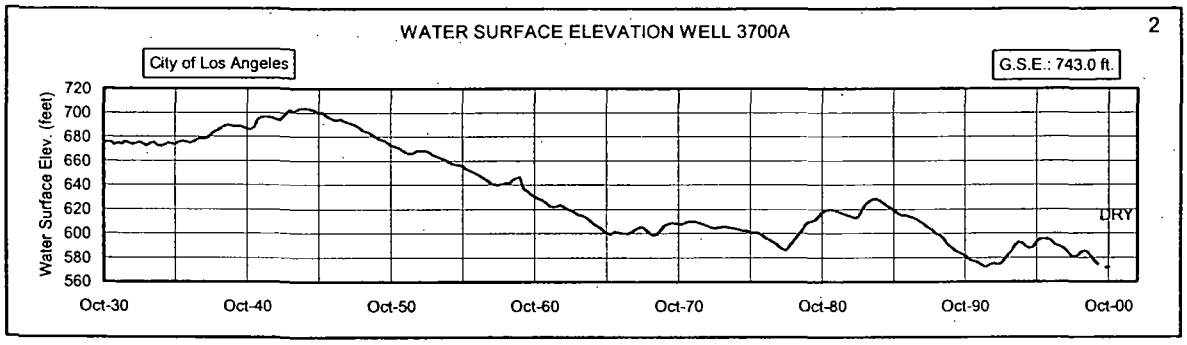
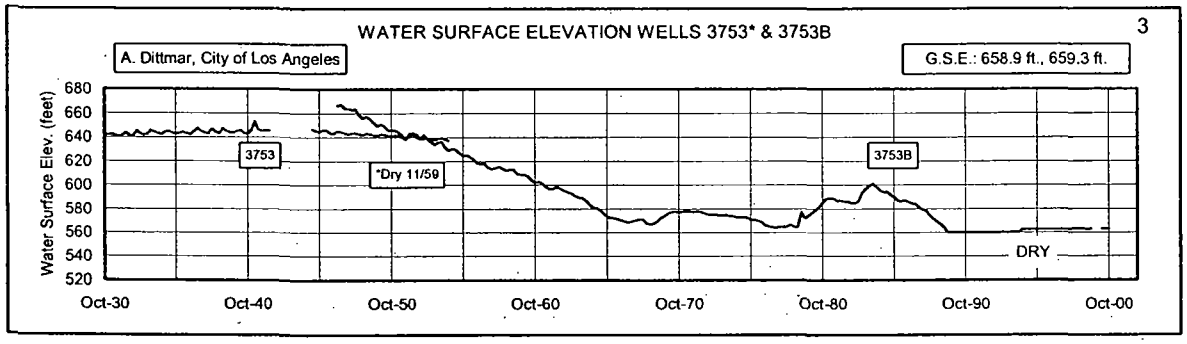


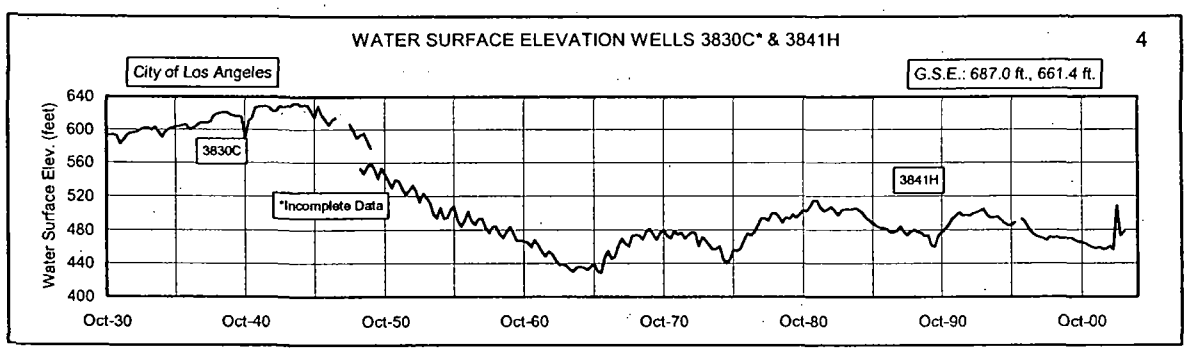
FIGURE 2.4 HYDROGRAPHS AND LOCATIONS OF WELLS THROUGHOUT ULARA

SAN FERNANDO BASIN

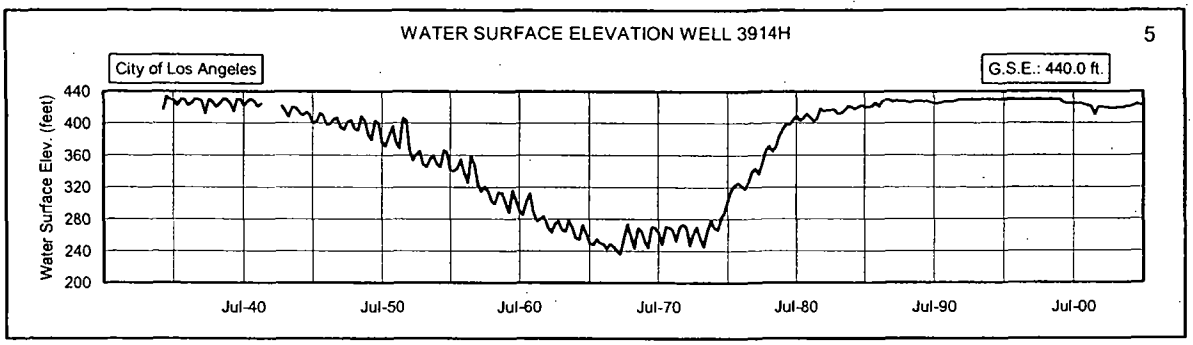


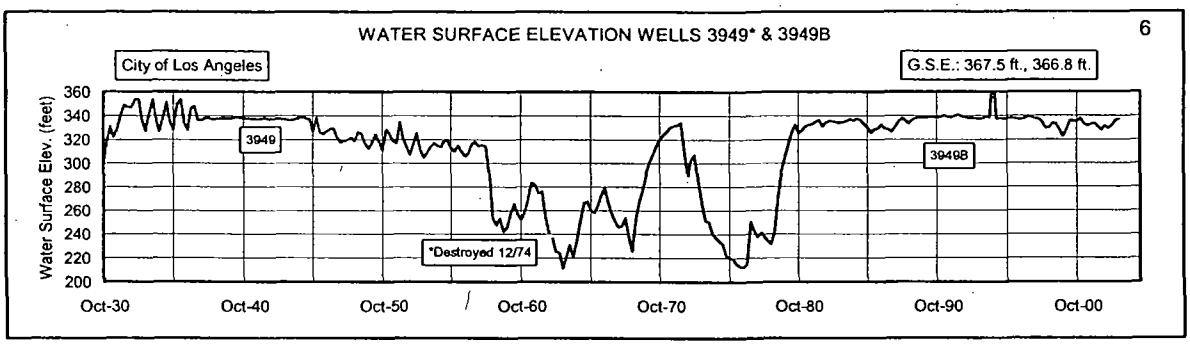


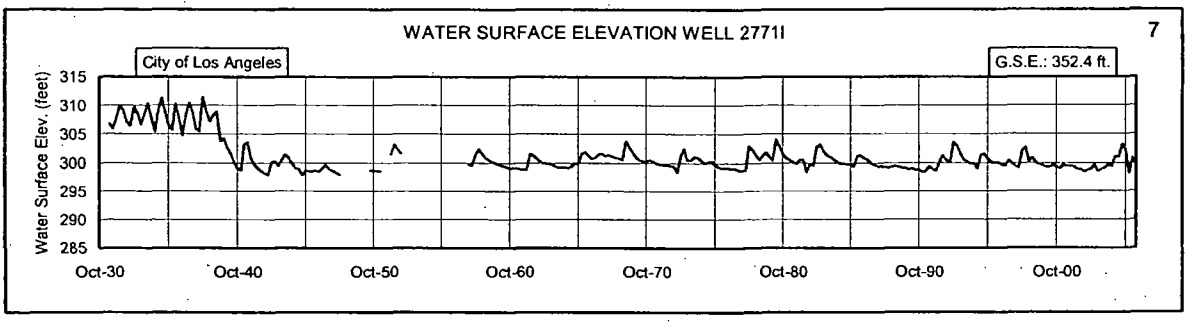


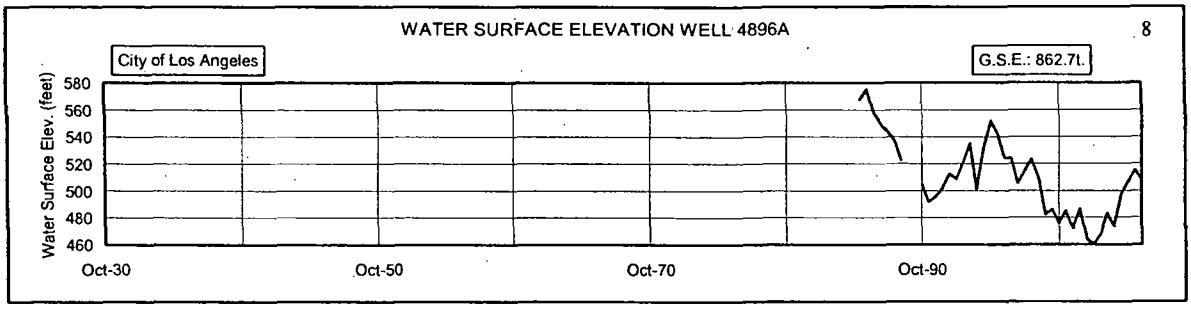


SAN FERNANDO BASIN

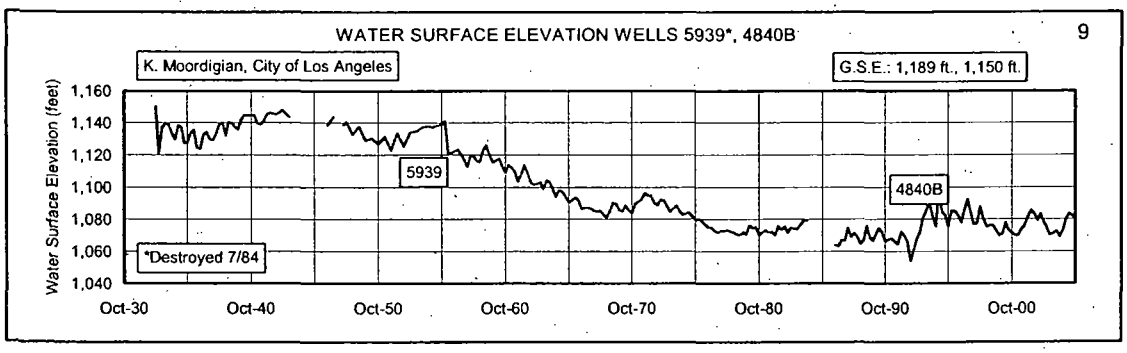


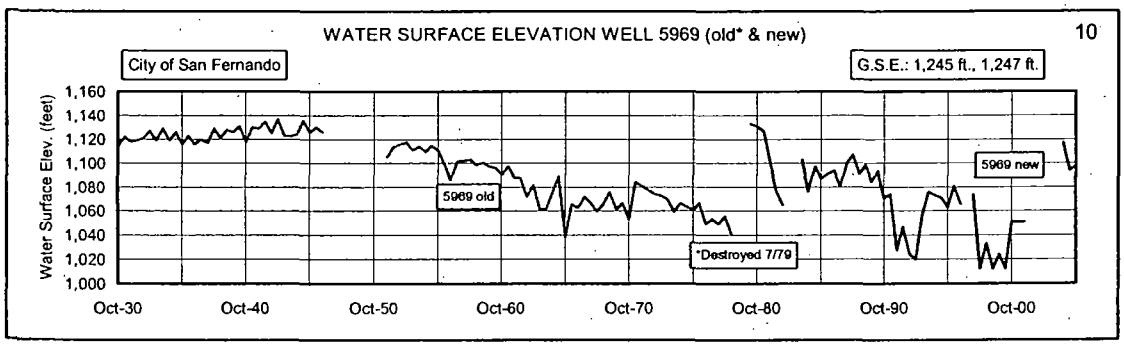






SYLMAR BASIN





VERDUGO BASIN

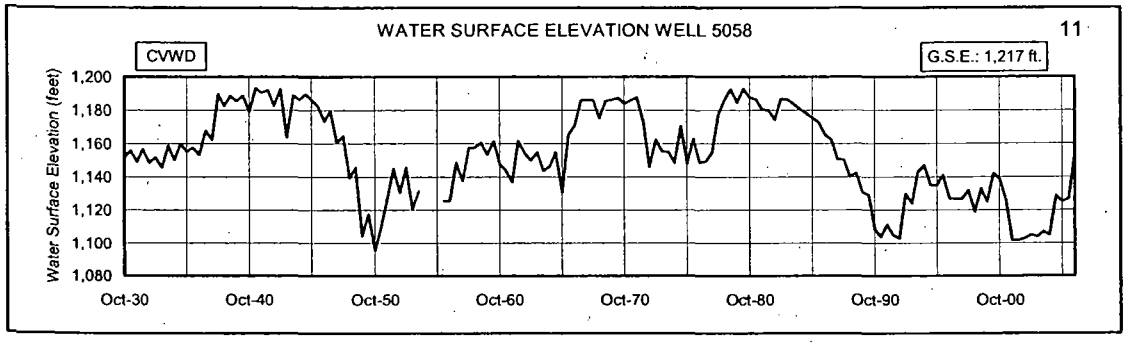


TABLE 2-8: CHANGE IN GROUNDWATER STORAGE SAN FERNANDO BASIN

Water Year	Valley Floor Precipitation (in)	Artificial Recharge (acre-feet)	Change in Storage (acre-feet)	Cumulative Change in Storage (acre-feet)	Pumping (acre-feet)
2005-06	16.46	44,615	16,303	167,198	59,375
2004-05	42.64	74,198	66,476	150,895	67,865
2003-04	9.52	10,065	(22,367)	84,419	89,346
2002-03	19.41	16,330	(15,835)	106,786	95,431
2001-02	5.95	2,664	(27,094)	122,621	87,992
2000-01	19.52	17,939	(6,930)	149,715	86,946
1999-00	14.84	14,106	(31,044)	156,645	116,357
1998-99	9.81	14,662	(82,673)	187,689	141,757
1997-98	37.04	61,119	44,113	270,362	94,682
1996-97	15.17	23,172	(35,737)	226,249	105,899
1995-96	12.03	21,239	(49,223)	261,986	82,862
1994-95	33.36	69,108	79,132	311,209	58,121
1993-94	10.19	19,981	(22,238)	232,077	62,990
1992-93	36.62	64,658	106,317	254,315	36,419
1991-92	30.05	39,624	411	147,998	76,213
1990-91	14.38	18,718	(14,122)	147,587	71,065
1989-90	8.20	4,154	(29,941)	161,709	81,466
1988-89	9.12	5,713	(30,550)	191,650	127,973
1987-88	18.62	23,161	(5,000)	222,200	105,470
1986-87	5.99	7,952	(31,940)	227,200	91,632
1985-86	20.27	28,350	(7,980)	259,140	86,904
1984-85	11.00	22,493	(31,690)	267,120	101,591
1983-84	9.97	38,283	(63,180)	298,810	115,611
1982-83	39.64	102,925	121,090	361,990	68,394
1981-82	17.18	24,253	(530)	240,900	84,682
1980-81	11.04	31,891	(32,560)	241,430	92,791
1979-80	30.25	73,543	99,970	273,990	58,915
1978-79	21.76	72,454	78,080	174,020	59,843
1977-78	35.43	85,450	136,150	95,940	66,314
1976-77	14.19	8,197	(50,490)	(40,210)	125,445
1975-76	9.90	14,805	(30,090)	10,280	103,740
1974-75	14.74	22,786	(22,580)	40,370	95,830
1973-74	15.75	16,488	(21,820)	62,950	88,017
1972-73	20.65	24,342	17,020	84,770	82,004
1971-72	8.10	10,595	(17,090)	67,750	84,140
1970-71	15.57	24,143	15,340	84,840	79,010
1969-70	10.50	27,579	(9,740)	69,500	88,856
1968-69	29.00	71,506	79,240	79,240 [1]	84,186
38 Year Average	**18.52**	**32,981**	**4,400**		**87,004**

1. Accumulation of storage begun as of October 1, 1968.

2.9 Groundwater Storage

San Fernando Basin

The total groundwater storage capacity of the SFB was calculated by the State Water Rights Board in the Report of Referee to be approximately 3.2 million AF.

Each year, the change in storage is evaluated in three ways – between the most recent and the previous water year; for the cumulative change since Safe Yield Operation began in 1968; and, for the cumulative change since the beginning year of 1928.

In Fall 1968, following the Trial Court decision, Safe Yield Operation was implemented by the Court to halt the overdraft in groundwater levels that began in 1954 (Plate 13 blue line). Methodology established by the State Water Rights Board was used to derive a regulatory storage requirement of 360,000 AF for the SFB that considered normal wet-dry cycles, operational flexibility, and pumping based on the calculated safe yield. The upper boundary of 210,000 AF above the 1954 level was established to prevent excess rising groundwater from leaving the basin, and the lower boundary of 150,000 AF below the 1954 level provided storage space for wet years. Basin storage should be kept between the upper and lower boundaries of the regulatory storage range. Obviously, we are not operating the basin within that range.

Plate 13 illustrates two very important concepts. First, the blue line shows the change in actual water stored within the basin. Each year, groundwater level measurements throughout the basin are used to calculate the overall gain or loss of groundwater in the basin and the change is plotted annually on the graph. Reliable groundwater level data exists back to 1928, where the graph begins. The blue line on Plate 13 illustrates a 26-year overall decline in storage beginning in approximately 1980, interrupted only temporarily during years of heavy rainfall. This long-term decline in storage is caused by water leaving the basin faster than it is recharged. Causes of this decline include pumping in excess of long-term recharge; reduced natural recharge caused by increased urbanization and runoff leaving the basin; and reduced artificial recharge due to restrictions at the spreading grounds.

Second, the Judgment provides Los Angeles, Glendale, and Burbank (the "Parties") a right to store, or "carry over", un-pumped water into future years. These un-pumped water rights are accounted for as Stored Water Credits. The red line on Plate 13 represents the change in storage minus the total Stored Water Credits that the Parties have accumulated. In other

words, the red line illustrates what the change in storage would have been if the Parties had pumped their full rights beginning in 1968. If the Parties had exercised their full pumping rights as enumerated in the Judgment, the basin would be far below the level at which the Court declared Safe Yield Operation in 1968. This demonstrates unequivocally that the basin cannot supply the groundwater to which the Parties are entitled under the Judgment, and that there is a significant shortfall between water rights and hydrologic reality.

Compounding this problem is a provision in the Judgment that allows Stored Water Credits to accumulate indefinitely, with no limit on the amount of Stored Water Credits that the Parties can accumulate. As of October 1, 2006 the Parties had accumulated a total of 449,923 AF of Stored Water Credits. If the Parties had pumped their full water rights beginning in 1968 the basin would be 282,725 AF below the 1968 level at which the Court imposed Safe Yield Operation (Plate 13 red line), thus returning the basin to a condition of overdraft. Clearly, basin recharge is not keeping up with pumping rights enumerated in the Judgment. Because 282,725 AF of these Stored Water Credits are below the level at which Safe Yield Operation was mandated by the Court in 1968, it is the Watermaster's opinion that this water does not actually exist in the basin.

The Judgment established pumping rights based on two types of water rights: a Pueblo water right for Los Angeles of 43,660 AF/Y of all native water tributary to the SFB; and an Import Return water right for the Parties based on the amount of water delivered annually to their customers.

The 1975 Supreme Court decision in the *San Fernando* case states that only imported water shall be used to calculate Import Return water rights. The Judgment defines "imported water" as "Water used within ULARA, which is derived from sources outside said watershed." This means water from sources such as the Owens Valley, Northern California, or the Colorado River. Nevertheless, historical documents show that in 1978 the Parties agreed to use *all* delivered water, including pumped groundwater, in the calculation of Import Return rights. This agreement was an attempt by the Parties to simplify management of the basin, but it ignored the language of the Supreme Court decision as well as fundamental basin hydrology. In the Watermaster's opinion, as a result of this agreement among the Parties, the formulas adopted in the 1979 San Fernando Judgment that are used to calculate Import Return rights have significantly overestimated the amount of delivered water that actually recharges the groundwater basin. Although there are several reasons for the long-term decline in storage and the accumulation of Stored Water Credits, this 1978 agreement among the Parties is the single

largest contributor to the existing imbalance. Had the Parties, and the Judgment language, strictly adhered to the Supreme Court decision the current basin imbalance would be significantly smaller.

The challenge facing the Parties, the Watermaster, and the Court is therefore twofold: a long-term decline in actual stored water, and an accumulation of a large quantity of Stored Water Credits for which there is insufficient real water in storage. Accounting for these non-existent Stored Water Credits is understandably controversial, and reducing future pumping to match the actual basin recharge will be equally controversial. Nevertheless, it is the duty of the Watermaster and the Parties to manage the San Fernando Basin in a responsible manner that assures its long-term sustainability. Solutions to these challenges are under consideration by the Parties, the Watermaster, and the Court.

On a positive note, there is approximately 488,172 AF of storage space available in the SFB. This space can be used to capture additional native water or imported supplies during wet years. Basin storage space is a valuable resource, and the Watermaster Office supports its wise use for the benefit of the public.

Sylmar Basin

The groundwater storage capacity of the Sylmar Basin is approximately 310,000 AF. The estimated change in storage from 2004-05 to 2005-06 is +279 AF, and the cumulative change in storage from 1968-69 through 2005-06 is +3,274 AF.

Verdugo Basin

The groundwater storage capacity of the Verdugo Basin is approximately 160,000 AF. The estimated change in storage for 2005-06 compared to 2004-05 is +1,491 AF, and the cumulative change in storage from 1968-69 through 2005-06 is -7,060 AF.

The long-term decline in Verdugo Basin groundwater was partially reversed by the heavy rains of 2004-05. The probable causes of the decline seen in the past years include increased urbanization and runoff leaving the basin, and a significant reduction in groundwater recharge from cesspools and septic systems following the installation of sewers beginning in the 1980s. An evaluation of stormwater storage and conjunctive use was completed in May 2005, and a geophysical study was completed in June 2006.

Eagle Rock Basin

The estimated change in storage from 2004-05 to 2005-06 is +43 AF.

2.10 Water Supply and Disposal - Basin Summaries

Tables 2-9A, 2-9B, 2-9C, and 2-9D summarize water supply and disposal in the San Fernando, Sylmar, Verdugo, and Eagle Rock basins, respectively. Outflows are based on computations made by the State Water Rights Board in the Report of Referee.

2.11 Extraction Rights and Stored Water Credit - Basin Summaries

San Fernando Basin

Tables 2-10A and 2-11A show the calculation of SFB extraction rights for the 2005-06 Water Year and Stored Water Credit (as of October 1, 2006) for the Cities of Burbank, Glendale, and Los Angeles. All rights are based on the Judgment in *City of Los Angeles vs. City of San Fernando, et al.*, dated January 26, 1979.

Sylmar Basin

Tables 2-10B and 2-11B show the calculation of Sylmar Basin extraction rights for the 2005-06 Water Year and Stored Water Credit (as of October 1, 2006) for the Cities of Los Angeles and San Fernando. All rights are based on the March 22, 1984 stipulation between the City of San Fernando and the City of Los Angeles and the action by the Administrative Committee on July 16, 1996 to temporarily increase the safe yield from 6,210 AF/Y to 6,510 AF/Y. The temporary increase expired and was re-evaluated. A new stipulation dated December 13, 2006 increased the safe yield to 6,810 AF/Y effective October 1, 2006 subject to certain conditions (Appendix F).

Verdugo Basin

Glendale and CVWD have rights to extract 3,856 and 3,294 AF/Y respectively. Glendale has not pumped its full right since the Judgment was entered, but has expressed its intent to increase pumping in the foreseeable future. In the past, CVWD has extracted in excess of its right with the permission of Glendale and the approval of the Watermaster. During the 2004-05 Water Year, CVWD pumped 16 AF above its entitlement without Glendale's consent or approval by the Watermaster. In 2005-06, CVWD pumped 59 AF over its entitlement without Watermaster approval. In December 2006, Glendale and CVWD reached a settlement

regarding the over-pumping for 2004-05 and 2005-06. The Watermaster thanks the parties for negotiating a settlement and encourages them to develop an agreement to guide future over-pumping.

Los Angeles has a right to extract its Import Return Flows in the Verdugo Basin, but has never exercised its right.

There are no Stored Water Credits in the Verdugo Basin.

Eagle Rock

Los Angeles has the right to extract, or cause to be extracted, the entire safe yield of the basin that consists mostly of return flows of delivered water by Los Angeles. Los Angeles does not pump groundwater from the Eagle Rock Basin. DS Waters, as successor to Sparkletts and Deep Rock, has a physical solution right to extract groundwater to supply its bottled drinking water facility. DS Waters pumped 190 AF in the 2005-06 Water Year.

TABLE 2-9A: SUMMARY OF 2005-06 WATER SUPPLY AND DISPOSAL SAN FERNANDO BASIN

(acre-feet)

Water Source and Use	City of Burbank	City of Glendale	City of Los Angeles	City of San Fernando	All Others	Total
Extractions						
Municipal Use	10,108	7,374	38,042	---	0	55,523
Basin Account	0	0	0	---	0 [1]	0
Physical Solution	431 [2]	443 [2]	0	---	97 [7]	971
Cleanup/Dewaterers	---	---	0	---	453	453
Non-consumptive Use	---	---	---	---	2,427	2,427
Total	**10,539**	**7,816**	**38,042**	**0**	**2,978**	**59,375**
Imports						
LA Aqueduct Water	---	---	366,512	---	---	366,512
MWD Water	11,880	22,709	130,052	730	8,204 [3]	173,575
Groundwater from						
Sylmar Basin	---	---	2,175	2,600	---	4,775
Verdugo Basin						0
Total	**11,880**	**22,709**	**498,739**	**3,330**	**8,204**	**544,862**
Delivered Reclaimed Water	1,692	961	13 [4]	0	1,634 [3]	4,299
Exports						
LA Aqueduct Water						
out of ULARA	---	---	175,530	---	---	175,530
to Verdugo Basin			562			562
to Sylmar Basin			7,288			7,288
to Eagle Rock Basin	---	---		---	---	0
MWD Water						
out of ULARA	---	---	59,415	---	---	59,415
to Verdugo Basin	---	2,135	208	---	---	2,343
to Sylmar Basin	---	---	2,695	---	---	2,695
to Eagle Rock Basin			0			0
Groundwater	27 [5]	828 [5]	35,789	---	---	36,644
Total	**27**	**2,963**	**281,487**	**0**	**0**	**284,477**
Delivered Water						
Hill & Mountain Areas	---	---	48,605	---	---	48,605
Total - All Areas	24,084	28,523	255,307	3,330	12,815	324,059
Water Outflow						
Storm Runoff (F-57C-R)	---	---	---	---	77,063	77,063
Subsurface	---	---	---	---	399	399
Sewage	2,452	18,347	71,148	2,583	---	94,530
Reclaimed Water to						
the LA River	7,178	3,945	50,046	---	---	61,169
Hyperion		538 [6]	19,452 [6]			19,990
Total	**9,630**	**22,830**	**140,647**	**2,583**	**77,462**	**253,152**

1. Basin Account water is not charged to any party.
2. Includes Valhalla (Burbank) and Forest Lawn (Glendale).
3. Las Virgenes Municipal Water District.
4. LA total recycled water is 2,526 AF of which 13 AF were delivered to valley fill and 2,513 delivered to hill/mountains.
5. Glendale OU and Burbank OU treated groundwater discharged to Los Angeles River or sewer.
6. Water discharged from Tillman and LA-Glendale plants. Annual cities' portion from LAG based on proportion of reclaimed water.
7. Pumping from Hill and Mountain areas tributary to SFB.

TABLE 2-9B: SUMMARY OF 2005-06 WATER SUPPLY AND DISPOSAL SYLMAR BASIN

(acre-feet)

Water Source and Use	City of Los Angeles	City of San Fernando	All Others	Total
Total Extractions	2,175	2,857	0 [1]	5,032
Imports				
LA Aqueduct Water	7,288	--	--	7,288
MWD Water	2,695	72	--	2,768
Total	**9,983**	**72**	**0**	**10,055**
Exports - Groundwater to San Fernando Basin	2,175	2,600	0	4,775
Total Delivered Water	9,983	329	0	10,312
Water Outflow				
Storm Runoff	5,000 [2]			5,000
Subsurface	560 [3]	--	--	560
Sewage	830 [3]	233	--	1,063
Total	**6,390**	**233**	**0**	**6,623**

1. Pumping for landscape irrigation by Santiago Estates. The well was capped in 1999.
2. Surface outflow is not measured. Estimate based on Mr. F. Laverty – SF Exhibits 57 and 64.
3. Estimated in the Report of Referee.

TABLE 2-9C: SUMMARY OF 2005-06 WATER SUPPLY AND DISPOSAL VERDUGO BASIN

(acre-feet)

Water Source and Use	Crescenta Valley Water District	City of Glendale	La Canada Irrigation District	City of Los Angeles	Other	Total
Total Extractions	3,343	2,390	—	—	11 [1]	5,744
Imports						
LA Aqueduct Water	—	—	—	562		562
MWD Water	2,080	2,135	1,244	208		5,666
Total	2,080	2,135	1,244	770		6,229
Exports to San Fernando Basin	0	0	0	0		0
Delivered Reclaimed Water		153				153
Total Delivered Water	5,422	4,677	1,244	770	11	12,125
Water Outflow						
Storm Runoff (Sta. F-252) [3]					12,717	12,717
Subsurface to:						
Monk Hill Basin	---	---	---	---	300	300 [2]
San Fernando Basin	---	---	---	---	80	80 [2]
Sewage	2,170	1,190	0	473		3,833
Total	**2,170**	**1,190**	**0**	**473**	**13,097**	**16,930**

1. Private party extractions.
2. Estimated.
3. Includes rising groundwater.

TABLE 2-9D: SUMMARY OF 2005-06 WATER SUPPLY AND DISPOSAL EAGLE ROCK BASIN

(acre-feet)

Water Source and Use	City of Los Angeles	DS Waters	Total
Total Extractions	0	190 [1]	190
Imports			
LA Aqueduct Water from SFB	0	--	0
MWD Water (25+35) from SFB	0		0
MWD Water (17)	3,907		3,907
Groundwater from SFB	0	--	0
Total	**3,907**	**0**	**3,907**
Exports			
MWD Water (17) to SFB	0		0
Groundwater	0	190	190
Total	**0**	**190**	**190**
Total Delivered Water	3,907	(0)	3,907
Water Outflow			
Storm Runoff	--	--	-- [4]
Subsurface	50 [2]	--	50
Sewage	1,940 [3]	0	1,940
Total	**1,990**	**0**	**1,990**

1. DS Waters (formed by the merger of Suntory/Deep Rock Water Co. and McKesson/Danone Water Products) is allowed to pump as successor to Deep Rock and Sparkletts, under a stipulated agreement with the City of Los Angeles and export equivalent amounts.
2. Estimated in Supplement No. 2 to Report of Referee.
3. Estimated.
4. Not quantified.

TABLE 2-10A: CALCULATION OF 2006-07 EXTRACTION RIGHTS SAN FERNANDO BASIN

(acre-feet)

	City of Burbank	City of Glendale	City of Los Angeles
Total Delivered Water, 2005-06	24,084	28,523	255,307
Water Delivered to Hill and Mountain Areas, 2005-06	---	---	48,605
Water Delivered to Valley Fill, 2005-2006	24,084	28,523	206,702
Percent Recharge Credit	20.0%	20.0%	20.8%
Return Water Extraction Right	4,817	5,705	42,994
Native Safe Yield Credit	---	---	43,660
Total Extraction Right for the 2006-2007 Water Year[1]	**4,817**	**5,705**	**86,654**

1. Does not include Stored Water Credit and Physical Solution.

TABLE 2-10B: CALCULATION OF 2006-07 EXTRACTION RIGHTS SYLMAR BASIN

(acre-feet)

	City of Los Angeles	City of San Fernando	All Others
Extraction Right for the 2006-2007 Water Year[1]	3,405	3,405	--- [2]

1. Does not include Stored Water Credit. The safe yield of the Sylmar Basin was increased to 6,810 AF/YR effective October 1, 2006. Effective October 1, 1984 safe yield less pumping by Santiago Estates is equally shared by Los Angeles and San Fernando.
2. Santiago Estates (Home Owners Group) stopped pumping in 1999.

TABLE 2-11A: CALCULATION OF STORED WATER CREDIT SAN FERNANDO BASIN

(acre-feet)

	City of Burbank	City of Glendale	City of Los Angeles
1. Stored Water Credit (as of October 1, 2005)	20,191	64,103	325,739
1a. Credits and debits.			
2. Extraction Right for the 2005-06 Water Year	4,350	5,547	86,941
3. 2005-06 Extractions			
Party Extractions	10,108	7,374	38,042
Physical Solution Extractions	431	443	97
Clean-up/Dewaterers	4		450
Total	10,542	7,817	38,589
4. Total 2004-05 Spread Water	0	0	0
5. Stored Water Credit [1] (as of October 1, 2006)	**13,999**	**61,833**	**374,091**

1. Item 5 = 1 +1a + 2 – 3 + 4.

TABLE 2-11B: CALCULATION OF STORED WATER CREDIT SYLMAR BASIN

(acre-feet)

	City of Los Angeles	City of San Fernando
1. Stored Water Credit (as of October 1, 2005)	8,448	339
2. Extraction Right for the 2005-06 Water Year [1]	3,255	3,255
3. Total 2005-06 Extractions	2,175	2,857
Santiago Estates[2]	0.0	0.0
4. Stored Water Credit[3] (as of October 1, 2005)	**9,528**	**737**

1. The safe yield of the Sylmar Basin was increased to 6,810 AF/YR as of 10/1/06.
2. Santiago Estates pumping is equally taken from the rights of San Fernando and Los Angeles. Santiago Estates capped well in 1999.
3. Item 4 = 1 + 2 - 3

3. WATER QUALITY, TREATMENT, AND REMEDIAL INVESTIGATION ACTIVITIES

3. WATER QUALITY, TREATMENT, AND REMEDIAL INVESTIGATION ACTIVITIES

3.1 Water Quality

Imported Water

1. *LOS ANGELES AQUEDUCT* water is sodium bicarbonate in character and is the highest quality water available to ULARA. Its Total Dissolved Solids (TDS) concentration averaged about 210 parts per million (ppm) for 30 years before 1969. The highest on record was 320 ppm on April 1, 1946. TDS concentration on August 21, 2006 was 137 ppm.

2. *COLORADO RIVER* water is predominantly sodium-calcium sulfate in character, changing to sodium sulfate after treatment to reduce total hardness. Samples taken at the Burbank turnout between 1941 and 1975 indicated a high TDS concentration of 875 ppm in August 1955 and a low of 625 ppm in April 1959. The average TDS concentration over the 34-year period was approximately 740 ppm. Tests conducted at Lake Matthews showed an average TDS concentration of 658 ppm for Fiscal Year 2006.

3. *NORTHERN CALIFORNIA* water (State Water Project) is sodium bicarbonate-sulfate in character. It generally contains less TDS and is softer than local and Colorado River water. Since its arrival in Southern California in April 1972, the water has had a high TDS concentration of 410 ppm and a low of 247 ppm. Tests conducted at the Joseph Jensen Filtration Plant showed an average TDS concentration of 271 ppm during Fiscal Year 2006.

4. *COLORADO RIVER/NORTHERN CALIFORNIA* water were first blended at the Weymouth Plant in May 1975. Blending ratios vary, and tests are taken from the effluent. Tests conducted at the Weymouth Plant showed an average TDS concentration of 389 ppm during Fiscal Year 2006.

Surface Water

Surface runoff contains salts dissolved from rocks in the tributary areas and is sodium-calcium, sulfate-bicarbonate in character. The most recent tests taken in September 1995 from flows in the Los Angeles River at the Arroyo Seco showed a TDS concentration of 666 ppm and a total

hardness of 270 ppm. These values also reflect the inclusion of rising groundwater in the Los Angeles River between Los Feliz Blvd. and Gage F-57C-R.

Chlorides in Surface Water

In 1997 the RWQCB adopted Resolution No. 97-02 in order to develop a long-term solution to the chloride compliance problems stemming from elevated levels of chloride, caused by drought and the use of water softeners, in supply waters imported into the Los Angeles region. Water Quality Objectives for chloride for the Los Angeles River between Sepulveda Flood Control Basin and Figueroa Street (including Burbank Western Channel only) has been raised from 100 mg/L to 190 mg/L. Chloride levels are reported in Appendix D.

Nitrogen in Surface Water

As part of a Total Maximum Daily Loads (TMDL) program, the Regional Board has ordered the Cities of Burbank and Los Angeles to determine the source of nitrogen in the Los Angeles River Narrows. The Cities have submitted a joint workplan to the Regional Board. The study is ongoing and is expected to be completed by December 2007.

Groundwater

Groundwater in ULARA is moderately hard to very hard. The character of groundwater from the major water-bearing formations is of two general types, each reflecting the composition of the surface runoff in the area. In the western part of ULARA, it is calcium sulfate-bicarbonate in character, while in the eastern part, including Sylmar and Verdugo Basins, it is calcium bicarbonate in character.

Groundwater is generally within the recommended limits of the California Title 22 Drinking Water Standards, except for: 1) areas of the eastern SFB where high concentrations of Trichloroethylene (TCE), Tetrachloroethylene (PCE), Hexavalent Chromium, and nitrates are present; 2) areas in the western end of the SFB having excess concentrations of sulfate and TDS; and 3) areas within the Verdugo Basin that have shown high concentrations of MTBE and nitrate. In each area the groundwater delivered is either being treated or blended to meet State Drinking Water Standards.

A history of the TDS content and mineral analyses of imported, surface, and groundwater is contained in Appendix D.

3.2 Groundwater Quality Management Plan

During the 2005-06 Water Year, the Interagency Coordinating Committee continued to implement the recommendations of the "Groundwater Quality Management Plan - San Fernando Valley Basins" issued in July 1983. The objective of this effort is to protect and improve the quality of stored water held in ULARA. Special emphasis is placed on monitoring and removing the organic contaminants TCE and PCE found in the groundwater. Table 3-1 summarizes the number of ULARA wells that are contaminated at the indicated levels above the Maximum Contaminant Level (MCL) of the California Drinking Water Standards of 5 parts per billion (ppb) for TCE and 5 ppb for PCE.

TABLE 3-1: 2005-06 NUMBERS OF WELLS IN THE ULARA WELL FIELDS EXCEEDING STATE MCL FOR TCE AND PCE

	Number of Wells													
	City of Los Angeles[3]									Sub-	Others[3]			Grand
Total Number of	NH	RT	P	HW	E	W	TJ	V	AE	Total	B	G	C	Total
Wells in Well Field[2]	35	15	3	4	7	8	12	5	7	96	16	13	12	137
Number of Wells Exceeding Contaminant Level[1]														
TCE Levels ppb														
5-20	2	5	1	-	1	1	6	0	4	20	0	0	0	20
20-100	0	6	0	-	0	0	0	0	5	11	7	3	0	21
>100	0	0	0	-	0	0	0	0	2	2	8	4	0	14
Total	2	11	1	-	1	1	6	0	11	33	15	7	0	55
PCE Levels ppb														
5-20	1	0	1	-	0	0	6	0	5	13	1	3	0	17
20-100	0	0	0	-	0	0	0	0	1	1	3	3	0	7
>100	0	0	0	-	0	0	0	0	0	0	11	1	0	12
Total	1	0	1	-	0	0	6	0	6	14	15	7	0	36

1. Wells are categorized based upon maximum TCE and PCE values measured during the 2005-06 Water Year. No data was available for some old inactive wells.
2. Includes active, inactive, and stand-by wells.
3. Well Fields: NH - North Hollywood; P - Pollock; HW - Headworks; E - Erwin; W - Whitnall; RT - Rinaldi Toluca; TJ - Tujunga; V - Verdugo; AE - LADWP Aeration Tower Wells; B - City of Burbank; G - City of Glendale; C - Crescenta Valley Water District

3.3 Underground Tanks, Sumps, and Pipelines

The City of Los Angeles Fire Department (LAFD) continues to implement the State-mandated Underground Storage Tank (UST) Program and is actively conducting a program to bring the large number of underground tanks in the San Fernando Valley into compliance with current law. During the 2005-06 Water Year, a total of 104 sites were remediated under the direction of the LAFD. Currently, the Environmental Unit of the LAFD is monitoring the remediation of 195 sites.

The main focus of the LAFD UST Program in ULARA has been the monitoring and removal of gasoline, diesel, and their related constituents from the soil, to prevent contamination of the underlying groundwater. If a site investigation indicates groundwater contamination, the site is referred to the RWQCB for further action. Since October 1, 2005, 43 sites have been assigned to the Underground Tank Plan Check Unit.

3.4 Private Sewage Disposal Systems (PSDS)

In order to eliminate existing commercial and industrial PSDS and their discharges of nitrates to the SFB, a sanitary sewer construction program has been in progress for many years. This program is continuing to systematically install sanitary sewers in eighteen Groundwater Improvement Districts (GIDs) throughout the San Fernando Valley. To date, a total of twelve areas have had construction completed, and six areas are in various stages of right-of-way acquisition and processing. Plate 7 shows the locations of these six GIDs.

The sewer construction program ordered by the City Council required project design and construction to be funded though Assessment Act provisions. Proposition 218, approved by the electorate on November 5, 1996, now requires that a majority of mail-in ballots of property owners approve any new or increased assessments, in order to proceed with funding the projects through the Assessment Program. The passage of Proposition 218 and continued downsizing of the workforce of the City of Los Angeles has impeded the sewer construction program for the remaining six GIDs.

Toward the end of the 1998-99 Water Year, inquiries by the Watermaster regarding scheduling for the completion of the remaining six GIDs led to the revision and re-estimation of construction plans for these improvements. Those projects were reactivated with the intent of facilitating the construction through the Assessment Program. The previously completed plans were revised as necessary and a revised construction cost estimate was prepared for each

project. Those anticipated construction costs and project incidental costs were spread among the owners of benefiting property within the individual districts and the owners were notified of their proportionate share of the assessable costs for the projects.

The majority of the responding property owners within GID No. 3 (Raymer St. Nr. Fulton Ave.); GID No. 17 (Glenoaks Blvd. Nr. Roxford St.); GID No. 19 (Sherman Way Nr. Balboa Blvd.); and GID No. 5 (Chandler Blvd. Nr. Lankershim Blvd.) and GID No. 12 (San Fernando Rd. Nr. Brazil St.) voted against construction of the assessment projects. These projects are now inactive. 61 percent of the responding owners serviced by GID No. 4 (San Fernando Rd. Nr. Keswick St.) voted in favor of the project. Right-of-way acquisition for that project is complete and construction will begin in October 2007.

Work on the five inactive GID projects has been deferred because of the fiscal impact to the City of Los Angeles for right-of-way acquisition and construction. The City Council will be notified of the current impasse regarding these projects. Further work on the projects will be contingent upon direction from the City Council and authorization for alternative financing of the projects.

In order to determine the number of properties not connected to a sewer, the Bureau of Sanitation updated the database for water users not being billed for sewer usage. The analysis initially revealed that in the San Fernando Basin approximately 5,700 of these properties are located within 50 feet of an existing sewer, and 7,700 of these properties are more than 50 feet from an existing sewer. The Bureau of Sanitation has prepared a map that covers the unsewered properties and municipal water supply wells within ULARA. The map will assist Bureau of Sanitation in prioritizing field inspections, beginning with unsewered properties within 1,000 feet of a production well.

The Bureau of Sanitation field checked hundreds of addresses in the past year. Most sites have been found to be connected to a sewer but are not being billed. Other addresses have two water meters - one for irrigation and a second for residential use. Some are on septic tanks in areas where there are no sewers.

The Industrial Waste Management Division (IWMD) of the Bureau of Sanitation continued to pursue the enforcement provisions of the PSDS elimination program.

3.5 Landfills

The Solid Waste Assessment Test (SWAT) reports for major SWAT Rank 1 to 4 landfills in the Los Angeles area have been completed and submitted to the RWQCB for approval. The reports reviewed by the RWQCB are listed in Table 3-2. As stipulated by Article 5 of Title 27, a follow-up sampling program under an Evaluation Monitoring Plan was required for some landfills due to the presence of VOCs in the underlying groundwater. Further updates to the SWAT would be triggered by post-closure land use.

The date of closure for the Bradley Landfill is April 2007. Waste Management, owner of the landfill, is focusing efforts on the construction of the Recycling and Transfer Center to replace the landfill.

TABLE 3-2: LANDFILLS WITH SWAT INVESTIGATIONS

(reported to Interagency Coordinating Committee)

Name	Rank	Status	Current Owner	Location	SWAT Report Completed	Final SWAT Submitted	Phase II SWAT Req.	Approved by RWQCB	Site Leak (1)	Type of Emission (2)	Further Monitoring
Bradley West	1	Open	WMDSC	Sun Valley, SE of Sheldon St.	6/87	11/90		4/92	G	NHA (I/O)	3
Sheldon-Arleta	1	Closed	City of Los Angeles Bureau of Sanitation	Sun Valley District near Hollywood & Golden State Fwys	5/87	5/87		2/90	G	MSW	4,7
Scholl Canyon	1	Open	City of Glendale	San Rafael Hills, 1 mile West of Rose Bowl	7/87	4/88		8/90	G	NHA (I/O)	3
Scholl Canyon	2	Closed	City of Glendale	San Rafael Hills, 1 mile West of Rose Bowl	7/87	8/90		12/93	G	NHA	5
Bradley East	2	Closed	WMDSC	SE of Sheldon St	6/87	11/90		4/92	G	NHA (I/O)	4, 8
Bradley West Extension	3	Open	WMDSC	Near Canyon Blvd & Sheldon St	7/88	7/89		4/92	G	MSW	3, 8
Sunshine Cyn. LA City	2	Closed	Browning - Ferris Industries	SE Santa Susana Mtns W of Golden State Fwy	7/88	7/89		4/94	G	MSW	6
Sunshine Cyn. LA County	2	Open	Browning - Ferris Industries	SE Santa Susana Mtns W of Golden State Fwy	7/88	7/89		4/94		MSW	6
Gregg Pit/Bentz	2	Closed	CalMat Properties	Between Pendleton St & Tujunga Ave	7/89	7/89		2/90	G	NHA	4
Branford	2	Closed	City of Los Angeles Bureau of Sanitation	Sun Valley District, NW of Tujunga Wash	7/88	10/90	X	6/92		MSW	4,7
CalMat (Sun Valley #3)	2	Open	CalMat Properties	Sun Valley District, NE of Glenoaks Blvd	7/88	11/90		6/92	N	Inert site	N,7
Lopez Canyon	2	Closed	City of Los Angeles Bureau of Sanitation	N of Hansen Dam near Lopez and Kagel Cyn	6/88	6/88	X				8
Toyon Canyon	2	Closed	City of Los Angeles Bureau of Sanitation	Griffith Park	6/88	3/89		4/91	L	NHA (I/O MSW)	3
Tuxford Pit	2	Closed	Aadlin Bros. (LA By-Products Co.)	Sun Valley District, SW of Golden State Fwy & Tujunga Ave	6/88	12/90		6/92		MSW	4, 8, 9
Penrose	2	Closed	Los Angeles (LA By-Products Co.)	N of Strathern St, Tujunga Ave	6/88	7/89		9/89	G	NHB (I/O)	4
Newberry	3	Closed	Los Angeles (LA By-Products Co.)	N of Strathern St, Tujunga Ave	6/88	7/89		9/89	G	NHB (I/O)	4
Hewitt Pit	2	Closed	CalMat Properties	North Hollywood District Hollywood Fwy, Laurel	6/88	7/89		5/91	G	NHB (I)	N
Pendleton St.	4	Closed	City of Los Angeles Bureau of Sanitation	Sun Valley, Pendelton St & Glenoaks Blvd	7/90	5/91		6/92	N	Inert Site	5
Stough Park	2	Open	City of Burbank	Bel Air Drive & Cambridge Drive	6/88	12/88		4/90	G	NHA Inert Site	3
Strathern			Never completed. Application 12/88.	Strathern St. & Tujunga Ave							10

1. G – Gas, L – Liquid. MSW – Municipal Solid Waste
2. NHA - Non-Hazardous but above state drinking water regulatory levels
   NHB - Non-Hazardous but below state drinking water regulatory levels
   I – Inorganic, O – Organic; N-No, Y-Yes
3. Under Title 27 Corrective Action Program (CAP), after completion of EMP.
4. Closed landfills with groundwater monitoring required under Title 27. Monitoring results are submitted to the Regional Board periodically.
5. Subject to SWAT requirements. Further monitoring may be required under Title 27.
6. All open landfills are required to have groundwater monitoring under Title 27. Monitoring results are submitted to the Regional Board quarterly or semi-annually.
7. Semi-annual groundwater monitoring.
8. Groundwater contamination Evaluation Monitoring Program (EMP) required under Title 27.
9. EPA involved in evaluation.
10. Under permit as Inert Landfill.

3.6 San Fernando Valley Remedial Investigation Activities

A remedial investigation (RI) of groundwater contamination in the San Fernando Valley was initiated in July 1987 by the USEPA to characterize the San Fernando Basin and the Verdugo Basin and their contamination with TCE and PCE. The LADWP was selected by the USEPA to serve as the lead agency in conducting the RI and entered into a cooperative agreement that has provided over $22 million in federal funding to LADWP beginning July 1987. In August 1987, the LADWP selected James M. Montgomery, Consulting Engineers, Incorporated to serve as its consultant to perform various RI tasks.

The report, "Remedial Investigation of Groundwater Contamination in the San Fernando Valley," was completed in December 1992 and is a comprehensive, five-volume report that presents the findings and characterizations of the SFB and the Verdugo Basin with regard to their geology, hydrogeology, and nature and extent of contamination. The RI report also provides a description and the documentation of the SFB Groundwater Flow Model, summarizes the RI field investigation activities, and evaluates potential risks to human health and the environment.

The SFB Groundwater Flow Model was developed as a part of the San Fernando Valley Remedial Investigation and is a comprehensive, three-dimensional, regional-scale model. A three-dimensional mass transport model has also been developed for the SFB. The model has been utilized for various groundwater projects to analyze the storage and physical characteristics of groundwater in the SFB.

USEPA's consultant, CH2M HILL, continues to periodically sample the 87 groundwater monitoring wells that were installed as part of the RI. CH2M HILL also obtains groundwater quality and groundwater elevation data from the municipalities and various agencies and facilities in the San Fernando Valley to update the SFB database. CH2M HILL utilizes the data to produce contaminant plume maps.

The RI Report and semi-annual sampling reports are available for public use at the Superfund Primary Information Repositories, which are located in the following libraries: City of Glendale, City of Burbank, LADWP, California State University-Northridge, and the University of California - Los Angeles.

The LADWP also maintains a current SFB database for use with the SFB flow model and generation of groundwater contour maps and contaminant plume maps. CH2M HILL forwards current groundwater quality data for incorporation into the LADWP database.

3.7 Water Treatment

USEPA Operable Units

The USEPA is proceeding with enforcement actions against Potentially Responsible Parties (PRPs) for the North Hollywood, Burbank, and Glendale North and South Operable Units (OUs), which are part of the USEPA's overall, long-term groundwater remediation activities in the SFB. The OUs are described below.

1. *NORTH HOLLYWOOD OU* - The North Hollywood OU (NHOU) construction was funded by the USEPA, DHS, and LADWP. The NHOU Operations and Maintenance is funded by the USEPA and LADWP. The NHOU removes VOCs by air-stripping. In 2005-06, 575 million gallons (1,766 AF) of groundwater were treated. This represents 617 AF more than the 2004-05 Water Year.

   Air discharged to the atmosphere was monitored for VOCs on a quarterly basis. All four quarters of VOC monitoring data were in compliance with permit requirements of the South Coast Air Quality Management District.

   Production at NHOU continues to be limited due to declining groundwater levels in the SFB. Although the 15-year NHOU Consent Decree expired on December 31, 2004, the VOC plume has not been fully remediated. In addition, a hexavalent chromium groundwater plume has been identified nearby, which the NHOU is not designed to remove. In Fall 2006 chromium levels began to increase in NHOU Aeration Well No. 2. The USEPA has begun a Focused Feasibility Study to evaluate VOC and chromium levels at the NHOU.

2. *BURBANK OU* - The Burbank OU, funded by Lockheed-Martin under a USEPA Consent Decree and operated by Burbank, uses aeration and liquid-phase GAC to remove VOCs from high nitrate groundwater and then blends it with water from the Metropolitan Water District (MWD) for delivery to the City of Burbank.

   Burbank assumed operation and maintenance of the BOU in 2001. Since that time, the facility has had difficulty in sustaining operation at the designed treatment rate of 9,000 gpm. Burbank, Lockheed-Martin, and the USEPA have been cooperating in an effort to determine the cause(s) of the reduced treatment rate and have made several design changes and repairs. The liquid-phase GAC vessels have been modified, and modifications to the vapor-phase GAC vessels should be completed in 2007. In addition, in 2005-06 the water table increased in the SFB, allowing higher Burbank OU well production than in previous years. However, the water table increase was due primarily to reduced production by LADWP and is not expected to continue indefinitely.

   In order to further explore ways to sustain production at 9,000 gpm levels Burbank selected Montgomery Watson Harza to conduct a Well Field Performance Attainment Study which is currently being evaluated by the USEPA. Options to increase production include deflating well packers from existing wells, drilling additional wells, and building a pipeline to blend MWD water with high chromium groundwater from the Lake Street wells.

   Burbank is also concerned about hexavalent chromium in water produced at the BOU and has been blending with imported water to keep the level of hexavalent chromium at, or below, 5 ppb. The BOU was not designed to treat chromium.

   A total of 10,108 AF were treated in the 2005-06 Water Year.

3. *GLENDALE NORTH AND SOUTH OUS.* Construction of the Glendale North and South Operable Units was completed and treated water was ready for delivery on September 26, 2000. The system includes four Glendale North OU extraction wells with a capacity of 3,300 gpm and four Glendale South

OU extraction wells with a capacity of 1,700 gpm. The process uses aeration and liquid-phase GAC to treat groundwater contaminated with VOCs and then blends it with MWD water at the Grandview Pump Station. A total of 6,777 AF were treated in 2005-06.

During the 2005-06 Water Year, a torn casing in Well GN-3 was repaired by inserting a new liner.

Research on Hexavalent Chromium removal technologies continues under funding from USEPA and AWWARF.

Other Treatment Facilities

1. *VERDUGO PARK WATER TREATMENT PLANT (VPWTP)* – Glendale's VPWTP serves as a chlorination and turbidity treatment facility. A total of 250 AF were treated in 2005-06.

2. *GLENWOOD NITRATE WATER TREATMENT PLANT* - CVWD's Glenwood Nitrate Water Treatment Plant, which uses an ion-exchange process for nitrate removal, treated 324 million gallons (997 AF) of water in 2005-06.

3. *POLLOCK WELLS TREATMENT PLANT* (PWTP) – The 3,000-gpm PWTP was dedicated on March 17, 1999. The treatment plant uses four GAC vessels to remove VOCs from Pollock Wells No. 4 and No. 6. The operation of these production wells reduces groundwater discharge to the Los Angeles River due to excess rising groundwater. A total of 2,442 AF of groundwater were treated during 2005-06.

4. *BURBANK GAC TREATMENT PLANT* - The City of Burbank GAC system (Lake St. wells) was shut down in March 2001 due to the levels of hexavalent chromium in the groundwater and remained out of service during the 2005-06 Water Year. The City of Burbank has a goal of accepting a maximum of 5 ppb of hexavalent chromium after blending for distribution to its water system. If the plant is returned to service, production may be considered as part of the average pumping goal of 9,000 gpm for the Burbank OU.

3.8 Groundwater Quality Investigations

There are several ongoing groundwater quality investigations in the San Fernando Basin. Some of the major sites and related activities are summarized below.

Boeing/Rocketdyne Santa Susana Field Lab, Simi Hills

This facility, located in the hills at the western end of the San Fernando Valley, was the site of rocket testing until the 1980s. As a result, soil and groundwater became contaminated with TCE and perchlorate. Several hundred monitoring wells have been installed and are being sampled and tested. Contaminated soil and groundwater are being remediated at selected locations.

CVWD-MTBE Investigation

In February 2004, methyl-tert-butyl-ether (MTBE) was discovered by CVWD in Well No. 5 during its annual VOC water quality sampling. MTBE was a gasoline additive, no longer in use, that leaked into and contaminated the groundwater. DHS directed CVWD to continue monitoring Well No. 5 on a quarterly basis. MTBE continued to be detected through 2005. CVWD retained McGuire Malcolm Pirnie Enviornmental Consultants (McGuire) to perform a "Preliminary Evaluation of MTBE Contamination Sources at CVWD Well No. 5". In addition, the Watermaster requested the RWQCB to perform an investigation into potential sources of MTBE. RWQCB met with CVWD in 2005, and has begun the investigation. In March 2006 the McGuire report was completed and forwarded to RWQCB. The report identified several potential source sites. RWQCB has agressively continued the investigation.

In 2006 MTBE levels in Well No. 7 increased significantly and the well was shut down. Methods to treat groundwater from this well are being evaluated in order to begin cleanup of groundwater before the plume spreads to the remaining wells.

The Watermaster, at the request of CVWD, formed a MTBE Task Force to expedite the investigation and cleanup of the contamination in order to return CVWD's wells to full operational capacity.

In addition, RELLC, an oil industry remediation firm representing several major oil companies, has joined the cleanup effort in CVWD. It is helping to define the plume by drilling monitoring wells at its clients' sites and exploring potential cleanup solutions.

DriLube, 711 W. Broadway and 718 W. Wilson, Glendale

DriLube Company, a plating facility located in Glendale, was issued a Cleanup and Abatement Order (CAO) by the RWQCB on March 29, 2002. DriLube was named a Responsible Party by the USEPA for discharging contaminants to the Glendale South Operable Unit from its site. The results of subsurface investigations have detected soil and groundwater contaminated with chlorinated solvents, petroleum hydrocarbons, PCBs, and heavy metals including chromium. On November 15, 2002 a fire at the DriLube Company totally destroyed the Plant 1 facility and records.

PRC-DeSoto (formerly Courtaulds Aerospace), 5430 San Fernando Road, Glendale

The RWQCB issued a CAO to PRC-DeSoto (formerly Courtaulds Aerospace) on August 22, 2002. This facility has been named a responsible party by USEPA for releasing chlorinated organic solvents within the Glendale South Operable Unit. The facility's principal industrial activities involve chemical formulation of adhesives and sealants used by the U.S. Department of Defense for various aerospace applications. Trichloroethane (1,1,1-TCA), dichloroethane (DCA), TCE, PCE, chromium, hexavalent chromium, and nickel have been found in soil and groundwater beneath the site. Three down-gradient wells were completed in May 2006. PRC-DeSoto has submitted a Remedial Action Plan (RAP) for the in-situ reduction of hexavalent chromium that is under review by the RWQCB.

Excello Plating, 4057 Goodwin Ave., Los Angeles

The RWQCB issued a CAO to Excello Plating on June 20, 2003. The CAO was revised and reissued on June 2, 2005. The facility's owners have been named a Responsible Party for releasing VOCs, hexavalent chromium, nickel, cadmium, zinc and lead. The purpose of this CAO is to ensure that Excello Plating completes the on-site and off-site assessment to delineate the lateral and vertical extent of heavy metal contaminants (specifically chromium) and, as necessary, undertake remediation of the affected soil and groundwater, on-site and off-site.

On September 23, 2004 the Los Angeles City Attorney charged Excello with a violation of the federal Clean Water Act for failure to comply in a timely manner with the CAO. This criminal

citation has corresponding financial penalties including fines of $50,000 per day. In 2006 there was an out-of-court settlement that includes a plan for more monitoring wells for plume delineation.

B.F. Goodrich (formerly Menasco/Coltec Industries, Inc.) 100 E. Cedar Ave., Burbank

The RWQCB issued a CAO to Coltec Industries, Inc. on July 5, 2002. This facility has been named a Responsible Party by the USEPA for discharging contaminants to the Glendale North Operable Unit. The facility's former industrial activities involve machining, manufacturing, metal plating and anodizing of parts and equipment used by the U.S. Department of Defense for various aerospace applications. TCE, PCE, DCE, 1,1,1-TCA and hexavalent chromium have been detected on this site. Recently constructed offsite groundwater monitoring wells are being sampled quarterly. B. F. Goodrich Aerospace is awaiting approval of the amended General Waste Discharge Requirement so that in-situ groundwater remediation can begin.

ITT/Home Depot, 1200 S. Flower St., Burbank

Home Depot has completed construction of a store and parking lot on part of the former ITT Aerospace Controls site. ITT Aerospace Controls manufactured parts, and conducted metal finishing and plating. Groundwater contamination at the site consists of VOCs, petroleum hydrocarbons, nickel, and hexavalent chromium. In 2004 Home Depot built a slurry wall around the site to prevent lateral migration of contamination. A naturally occurring low-permeability zone located 50 feet below the ground surface is expected to reduce vertical migration of the contaminants. ITT is responsible for cleanup of the area outside the Home Depot's slurry wall barrier. The RAP has been submitted and offsite assessment of groundwater has begun.

Brenntag (formerly Holchem) and Paxton Street LLC (formerly Price Pfister) - Pacoima Area Groundwater Investigation

A VOC contaminant plume was identified in the Pacoima area near the intersection of the Simi Valley Freeway (118 Freeway) and San Fernando Road. This site is approximately 2.5 miles upgradient of LADWP's Tujunga Well Field, which can supply up to 120 cfs of groundwater. LADWP installed two monitoring wells downgradient of the contaminant plume. Under DTSC guidance, Brenntag has installed a soil vapor extraction system (SVE).

The Paxton Street site (formerly Price Pfister), located southeast of Brenntag, has been directed to delineate the extent of VOC contamination with on-site and off-site monitoring wells. The RWQCB is the lead agency in enforcing cleanup of this site. Soil vapor extraction began in

September 2002 and air sparging began in June 2003. The soil excavation from all source areas in the northern part of the site (approximately 2/3 of the total 25 acres) has been completed. Groundwater monitoring is on-going. A Lowe's Home Center is planned for the site.

Honeywell (formerly Allied Signal/Bendix) 11600 Sherman Way, North Hollywood

Honeywell was issued a CAO on February 21, 2003 and an amended CAO In September 2004. The firm was directed to prepare a workplan for additional on-site and off-site subsurface assessment of soil and groundwater. The RAP for in-situ chromium remediation has been approved and will begin pending approval of the General Waste Discharge Requirement. Additional off-site wells have been approved for construction by the USEPA and RWQCB.

General Electric (formerly Pacific Airmotive), 2940 North Hollywood Way, Burbank

RWQCB has identified an apparent continuing source of VOCs at the former site of Pacific Airmotive property that is currently owned by General Electric. The soil vapor extraction system has been removing PCE vapor from underneath the adjacent property (2960 No. Hollywood Way).

Raytheon (formerly Hughes Missile Systems Company), 8433 Fallbrook Avenue, Canoga Park

Contaminants at the site include 1,1-DCE, TCE, PCE, TCA, BTEX and 1,1-DCA. TDS is in excess of the Basin Plan objectives, so the treated water may not be discharged to the Los Angeles River. As a result of the high TDS, the treatment plant effluent is stored in holding tanks, and used for on-site irrigation.

3M (formerly Riker Lab), 19901 Nordhoff, Northridge

Contaminants at this site include chloroform, 1,2-DCE, 1,2-DCA, and Freon 11. There has been a groundwater treatment system in operation since 1997. There are currently 15 groundwater extraction wells and two air-stripping towers in series capable of treating 60,000 gallons per day. In March 2005, 3M and its consultant, Weston Solutions, Inc. completed installation of a system to re-use the discharged portion of the groundwater for landscape irrigation. All of the treated groundwater is now beneficially used on-site.

3M has obtained a license from the National Aeronautics and Space Administration for a proprietary technology that 3M has used successfully at other sites. Nanometer-size iron

particles are suspended in an emulsion of vegetable oil which is injected into the contaminated groundwater. The iron particles strip the chlorine from the VOC molecules. The remaining hydrocarbon is then cometabolized by naturally-occurring bacteria in the soil and groundwater, which use the vegetable oil as a food source. 3M is evaluating whether the conditions at the Northridge site are compatible with this technology.

Micro Matics, 19791 Bahama St., Northridge

The soil and groundwater beneath a portion of the Micro Matic's property are contaminated with PCE and 1,1,1-TCA. The plume has moved off-site to the west beneath a portion of the former 3M property, and also to the south beneath Bahama Street. The 3M parcel contaminated by Micro Matics was sold to a developer, Nordhoff Industrial, in December 2004. Preparation and submittal of a groundwater remedial action plan will follow review of the HRC™ pilot test data submitted by Micro Matics.

Treatment currently consists of pumping contaminated groundwater and treating it with liquid-phase GAC. A plan has recently been approved by the RWQCB to inject a hydrogen donating compound into the aquifer to degrade the VOCs in-situ. The first phase of the HRC™ in-situ groundwater remediation pilot test has been implemented and initial results indicate a reduction in the PCE concentration. The second phase of the pilot test that includes injection of HRC-X™ was implemented in July 2005.

Tesoro Petroleum (former Fast Fuel, 11051 Victory Blvd., N. Hollywood)

Tesoro Petroleum is the owner of a gasoline station site in North Hollywood. A leaking underground tank caused a plume of gasoline hydrocarbons and MTBE that has migrated off-site toward several wells in LADWP's Whitnall Well Field. Tesoro, and its consultants Haley & Aldrich and Miller Brooks Environmental, have been performing soil remediation using soil vapor extraction. Working with its consultants, LADWP, RWQCB, and the Watermaster, Tesoro has implemented a groundwater cleanup plan that features ex-situ bioremediation and re-injection of the treated groundwater. Full-scale re-injection began in October 2005.

Taylor Yard (Los Angeles River Narrows Area)

The Union Pacific Railroad owns this large parcel along the Los Angeles River Narrows. It has been divided into two parts – the active yard and the sale parcel. The 25-acre active yard is contaminated with VOCs, SVOCs, fuel hydrocarbons, and metals. Remediation is under the jurisdiction of Cal-EPA DTSC.

The sale parcel has attracted the attention of several agencies and stakeholders including the State Parks Department and the California State Coastal Conservancy as a potential site for habitat restoration and recreation.

Chromium

In January 2003 the ULARA Watermaster published a report on hexavalent chromium contamination in the SFB. The RWQCB published a report of its four-year investigation of hexavalent chromium in December 2002. The presence of this contaminant threatens the use of SFB groundwater as a reliable source of water for Burbank, Glendale, and Los Angeles, and jeopardizes the Operable Units constructed with funding from the USEPA to clean up VOCs on a regional basis. The Operable Units that treat VOCs in the groundwater were not designed to treat chromium.

Total chromium is comprised of hexavalent chromium and trivalent chromium. Hexavalent chromium is a carcinogen when inhaled, but the effects when ingested are a subject of continuing debate. Trivalent chromium is a nutrient when ingested in small amounts.

A National Toxicology Program study is underway to determine a safe federal Maximum Contaminant Level (MCL) for hexavalent chromium, and should be completed in 2007. The Federal and State drinking water MCLs for total chromium are 100 ppb and 50 ppb, respectively. There are no separate standards for hexavalent chromium. Until hexavalent standards are developed, the total chromium standards will continue to be used.

At the State level, the Governor approved State Senate Bill 2127 in November 2000. This bill requires the DHS to determine the levels of chromium in the drinking water supplied by public water systems from the SFB aquifer and, in consultation with OEHHA, to assess the exposures and risks to the public. The report was due January 1, 2002 but has not been published as of this writing.

The Consent Decrees between the USEPA and the responsible parties require that certain pumping rates be maintained in the OUs to control VOC plume migration and provide contaminant removal. As these wells are pumped, the chromium plumes also migrate toward the wells, albeit at a slower rate than the VOCs. Hexavalent chromium has now appeared in all of the OUs in the SFB. Fortunately, the levels are currently low enough to allow blending with imported water to levels that meet all drinking water standards. However, should the levels

become too high to allow blending to reduce chromium to an acceptable level, the operation of the OUs will be compromised.

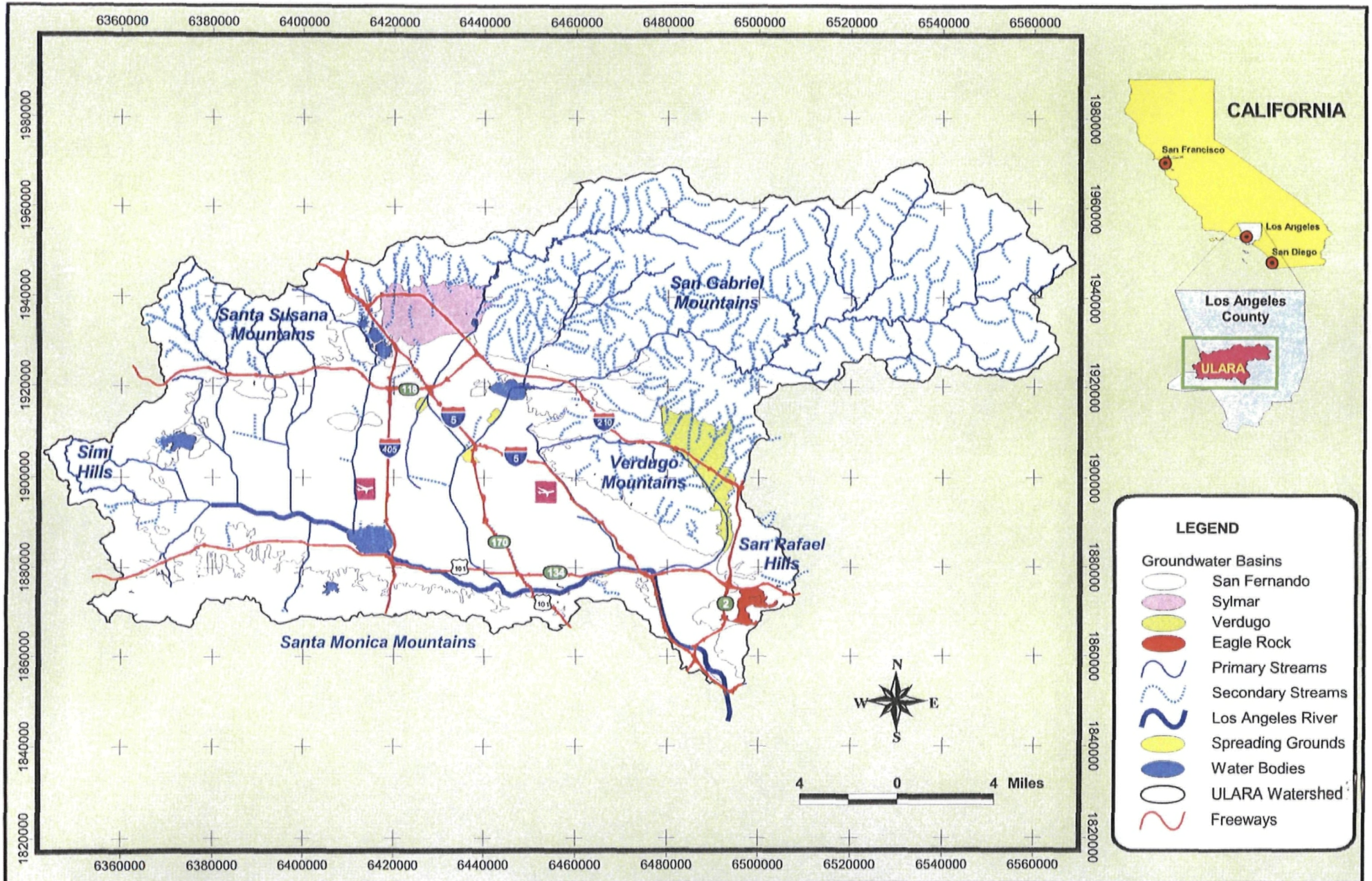
The RWQCB, with assistance from the USEPA and the cities of Burbank, Glendale, and Los Angeles received temporary staff support to expedite investigation of possible hexavalent chromium contaminated sites. The focus was on the several sites identified by the RWQCB with the highest reported levels of hexavalent chromium and the greatest potential impact on the three cities' OUs and well fields. Additional suspect sites were discovered during the investigation and these new sites have been transferred to the jurisdiction of Cal EPA-DTSC.

A study is underway by McGuire Malcolm Pirnie Environmental Consultants to identify a cost-effective technology to remove chromium to very low levels. The USEPA, American Water Works Research Foundation, and the cities of Glendale, Los Angeles, and Burbank are funding the project. Weak base anion exchange has been identified as a promising treatment technology. When additional funding is secured the City of Glendale intends to install a treatment system on at least one of its high-chromium OU wells.

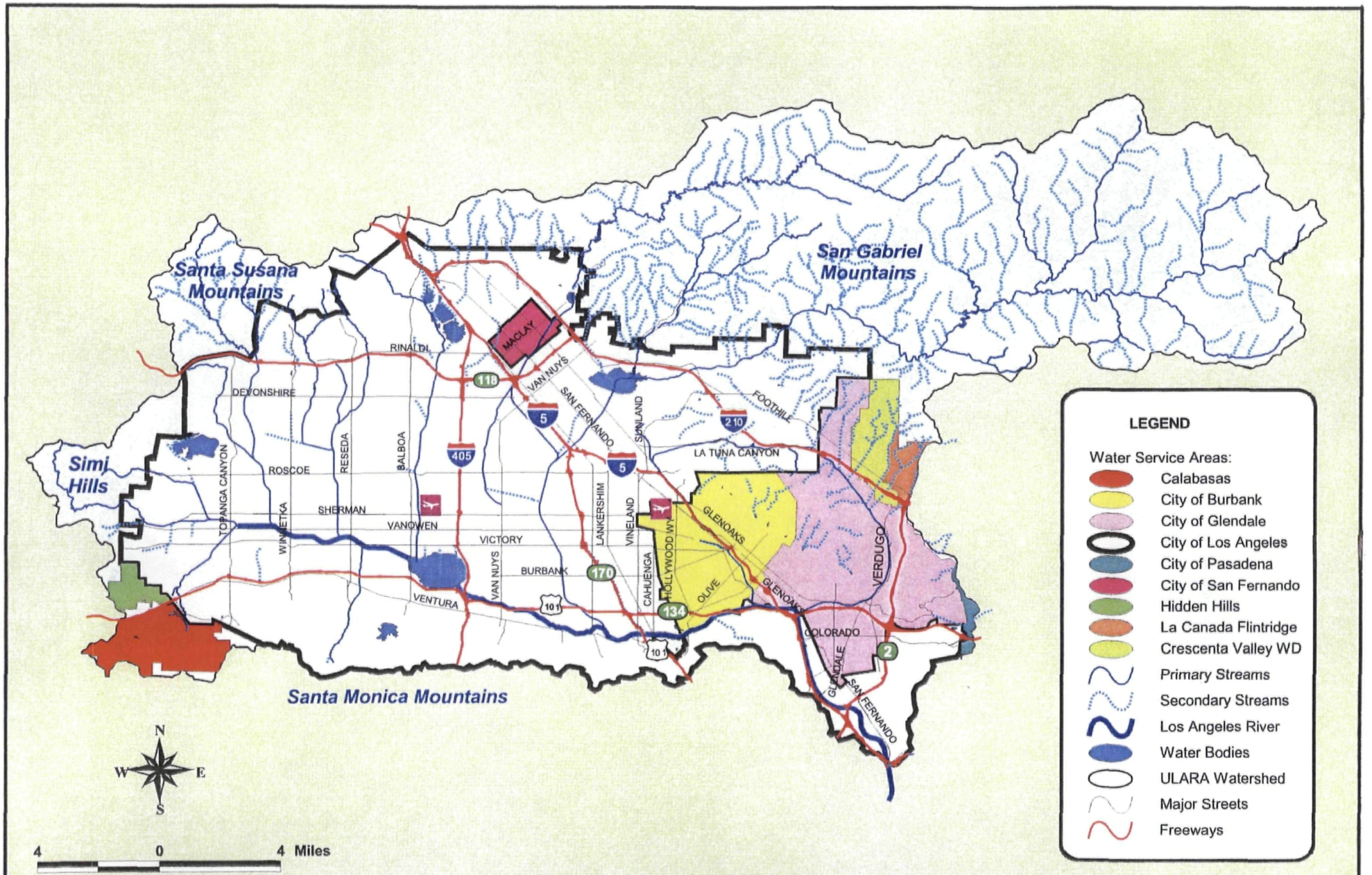
General Waste Discharge Requirements Permit (WDR)

On March 1, 2007 the RWQCB adopted a revision to the General Waste Discharge Requirements Permit. This marks significant progress in the effort to expedite cleanup of chromium and other contaminants in Los Angeles County. In the Notice of Preparation of Mitigated Negative Declaration the Regional Board "proposed to adopt General Waste Discharge Requirements for groundwater remediation at sites impacted by petroleum fuel, volatile organic compounds and/or hexavalent chromium. The adoption of WDRs for in-situ groundwater remediation/cleanup or the extraction of polluted groundwater with above ground treatment and the return of treated groundwater to the same aquifer zone would: a) simplify the application process for discharges, b) allow more efficient use of Regional Board staff time, c) reduce Regional Board time by enabling the Executive Officer to notify the discharger of the applicability of the general WDRs, d) enhance the protection of surface water quality by eliminating the discharge of wastewater to surface waters, and e) provide a level of protection comparable to individual, site-specific WDRs."

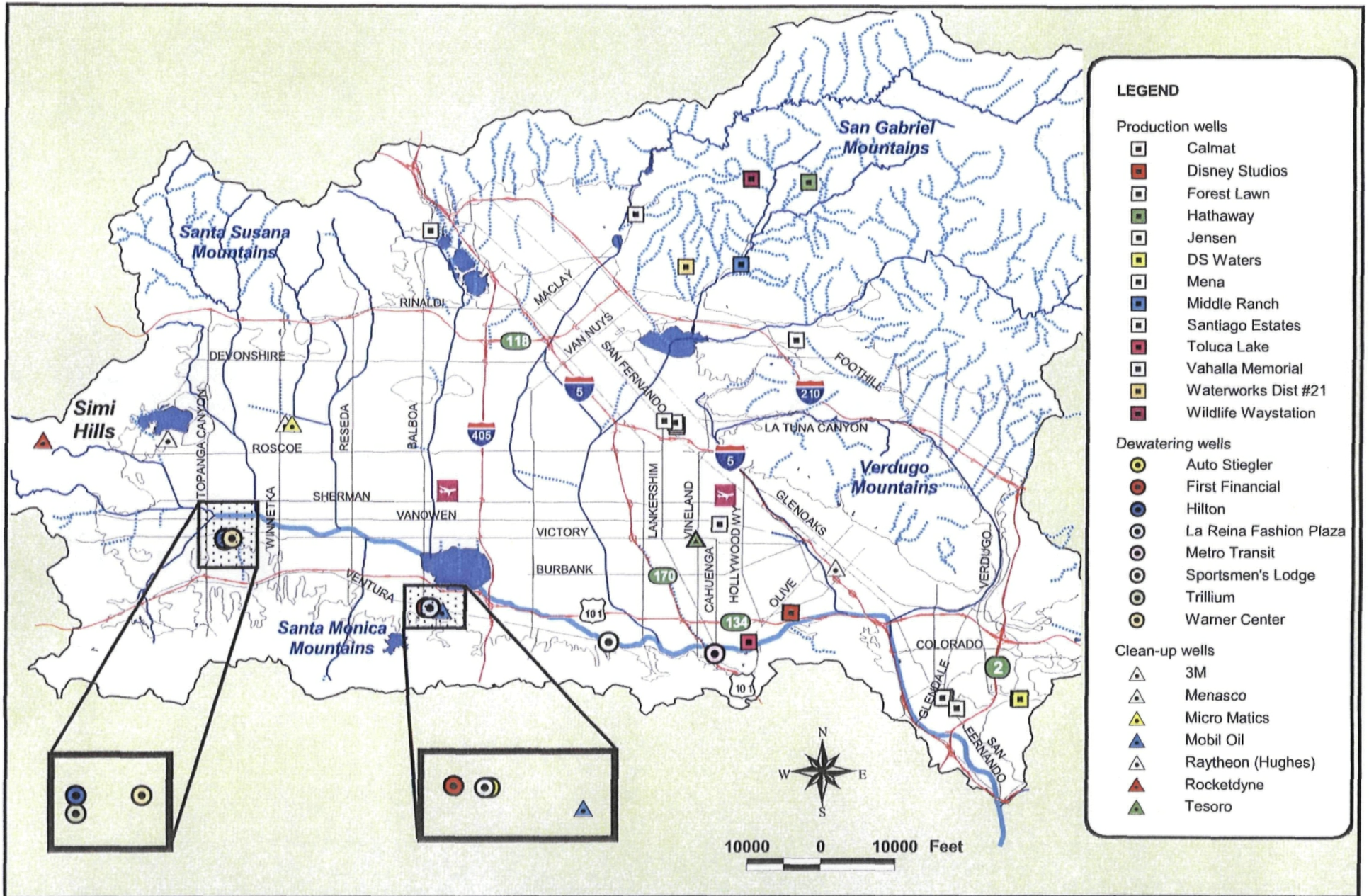
PLATES



2005-06 Water Year ULARA Watermaster Report	Upper Los Angeles River Area: Vicinity and Location Map	PLATE 1



2005-06 Water Year ULARA Watermaster Report	Upper Los Angeles River Area: Water Service Areas of Public Agencies	PLATE 2



2005-06 Water Year ULARA Watermaster Report	Upper Los Angeles River Area: Location of Individual Producers	PLATE 3

Plate 4

UPPER LOS ANGELES RIVER AREA

LOCATION OF WELLS AND HYDROLOGIC FACILITIES

LEGEND

- IMPEDIMENTS TO GROUNDWATER FLOW
- GROUNDWATER CASCADES
- QUESTIONABLE IMPEDIMENT OR GROUNDWATER CASCADE
- CLIMATIC STATION
- SURFACE WATER GAGING STATION
- SURFACE WATER SAMPLING POINT
- KEY WELL USED FOR HYDROGRAPHS
- KEY WELL USED FOR SAMPLING
- ACTIVE, OBSERVATION, OR TEST WELL
- SURFACE AND GRAVITY DIVERSION

SCALE

0 4,000 8,000 12,000 16,000 FEET

SANTA SUSANA MOUNTAINS

SIMI HILLS

SANTA MONICA MOUNTAINS

VERDUGO MOUNTAINS

Rocketdyne Santa Susana Field Laboratory Wastewater Treatment Plants

Indian Hills Mobile Homes Wastewater Treatment Plant

Forestore Wastewater Treatment Plant

L.A. - Glendale Wastewater Treatment Plant

City Of Burbank Wastewater Treatment Plant

CVCVTD Wastewater Treatment Plant

GROUNDWATER DIVIDE

PACOIMA RESERVOIR

STELMAR

LOS ANGELES RESERVOIR

GRANADA HILLS

CHATSWORTH

NORTHRIDGE

RESEDA

CANOGA PARK

WOODLAND HILLS

VAN NUYS

NORTH HOLLYWOOD

BURBANK

GLENDALE

EAGLE ROCK

TUJUNGA

SHERMAN OAKS

ENCINO RESERVOIR

UNIVERSAL CITY

HANSEN DAM

PACOIMA DAM

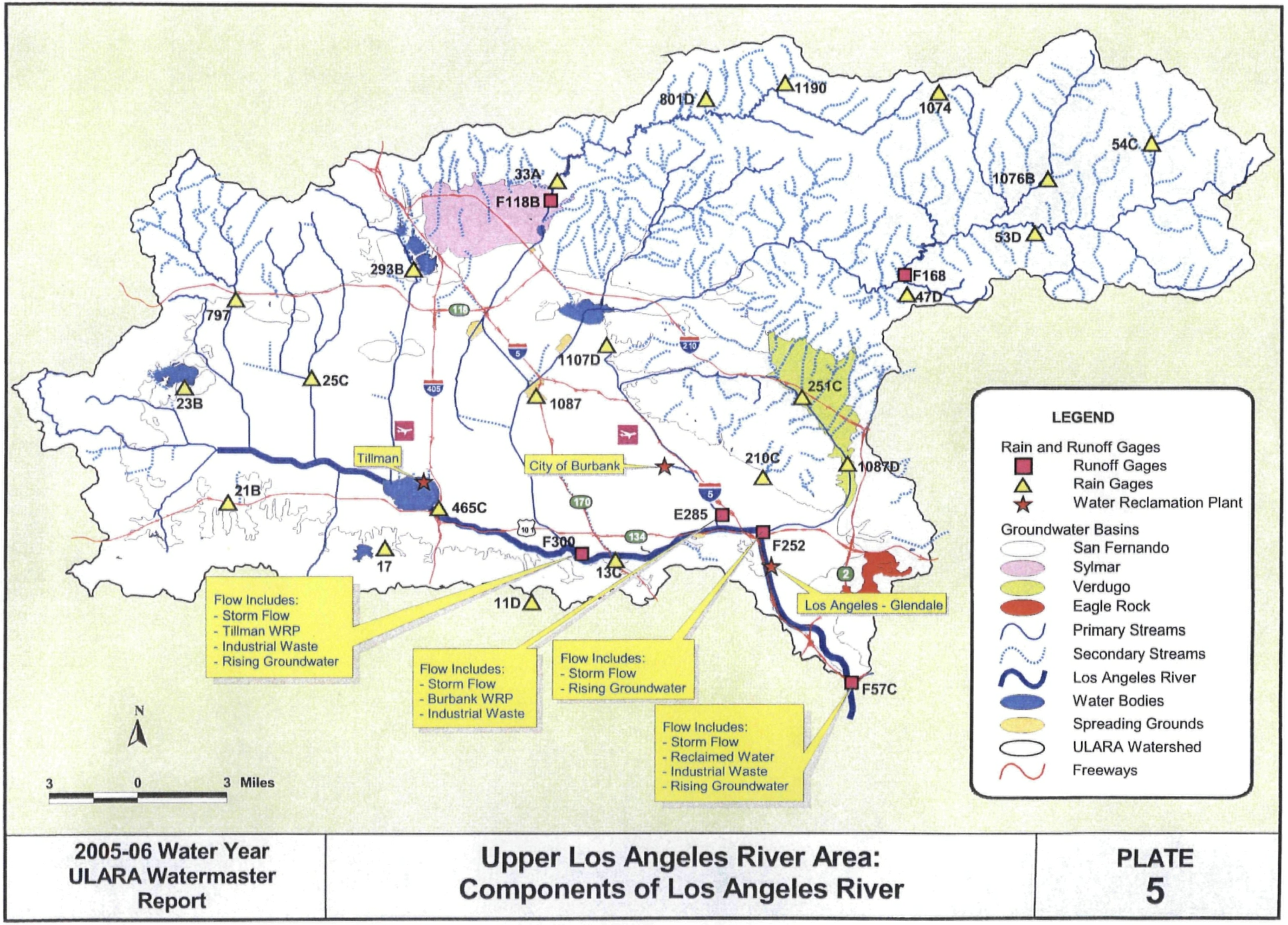
SAN TUJUNGA RESERVOIR

Van Nuys Airport

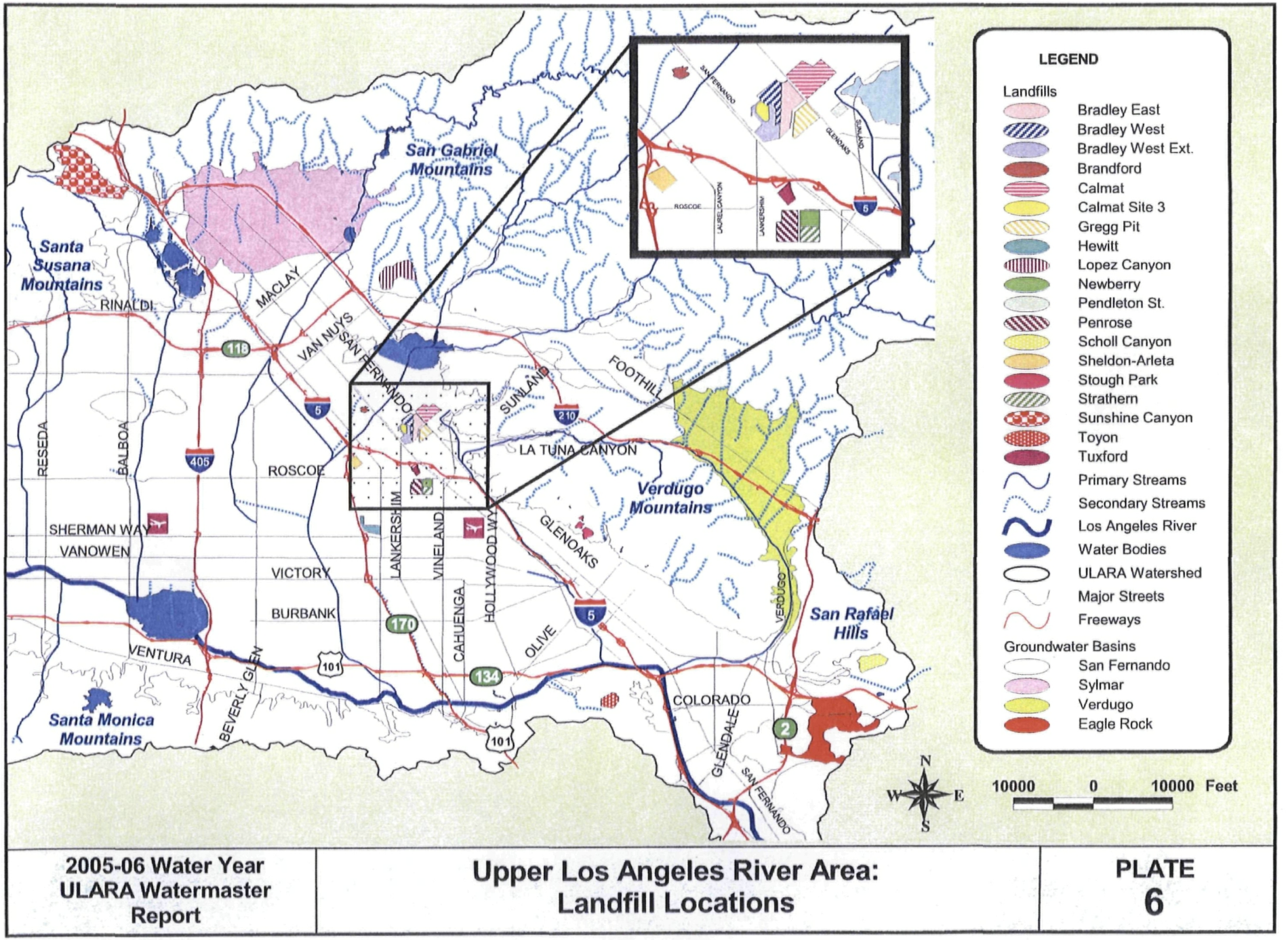
Burbank-Glendale-Pasadena Airport

Raymond Fault

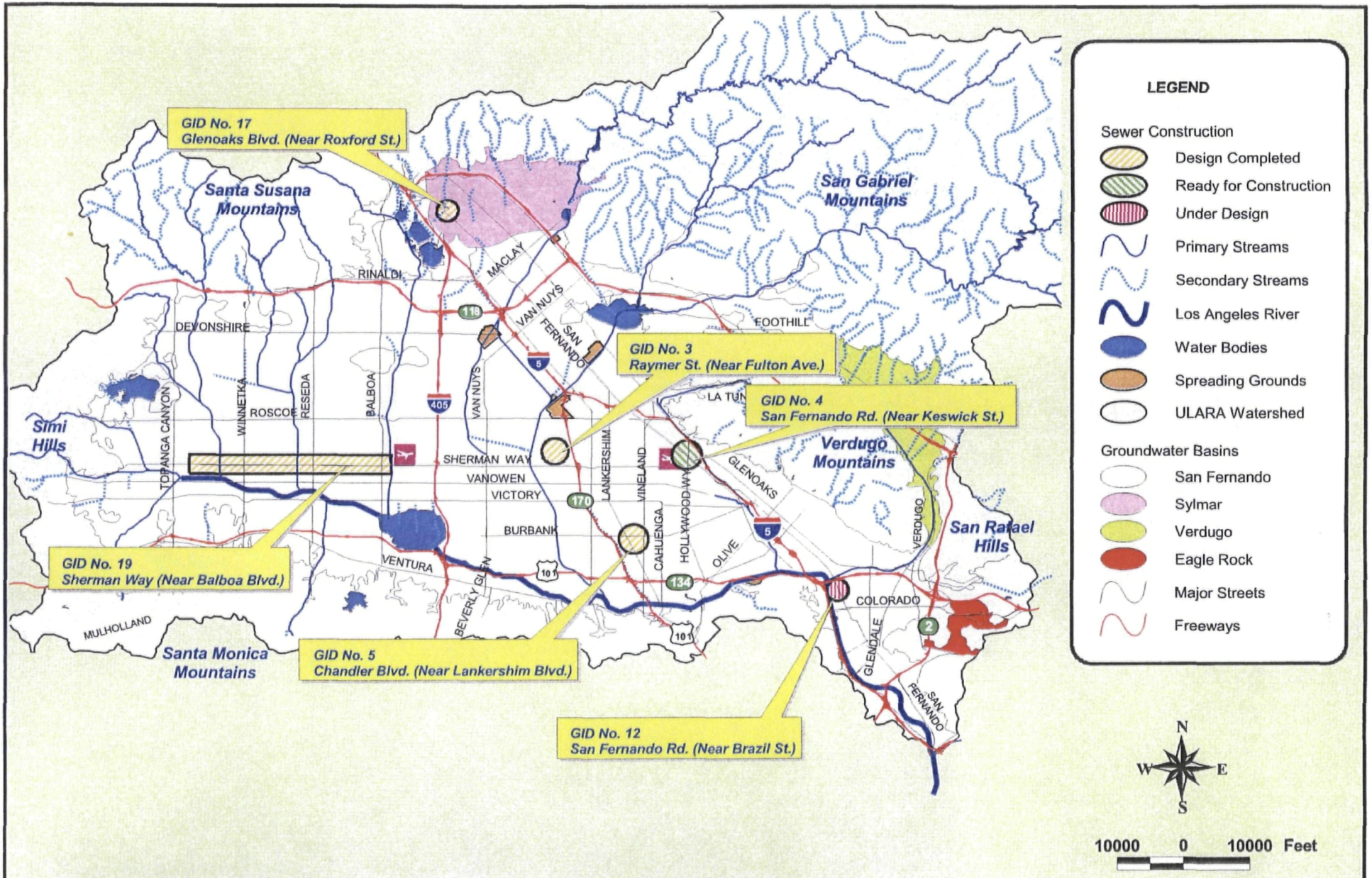
NOTE: 4.25 miles to Tapia Water Reclamation Plant which delivers water to a portion of the west end of ULARA area.



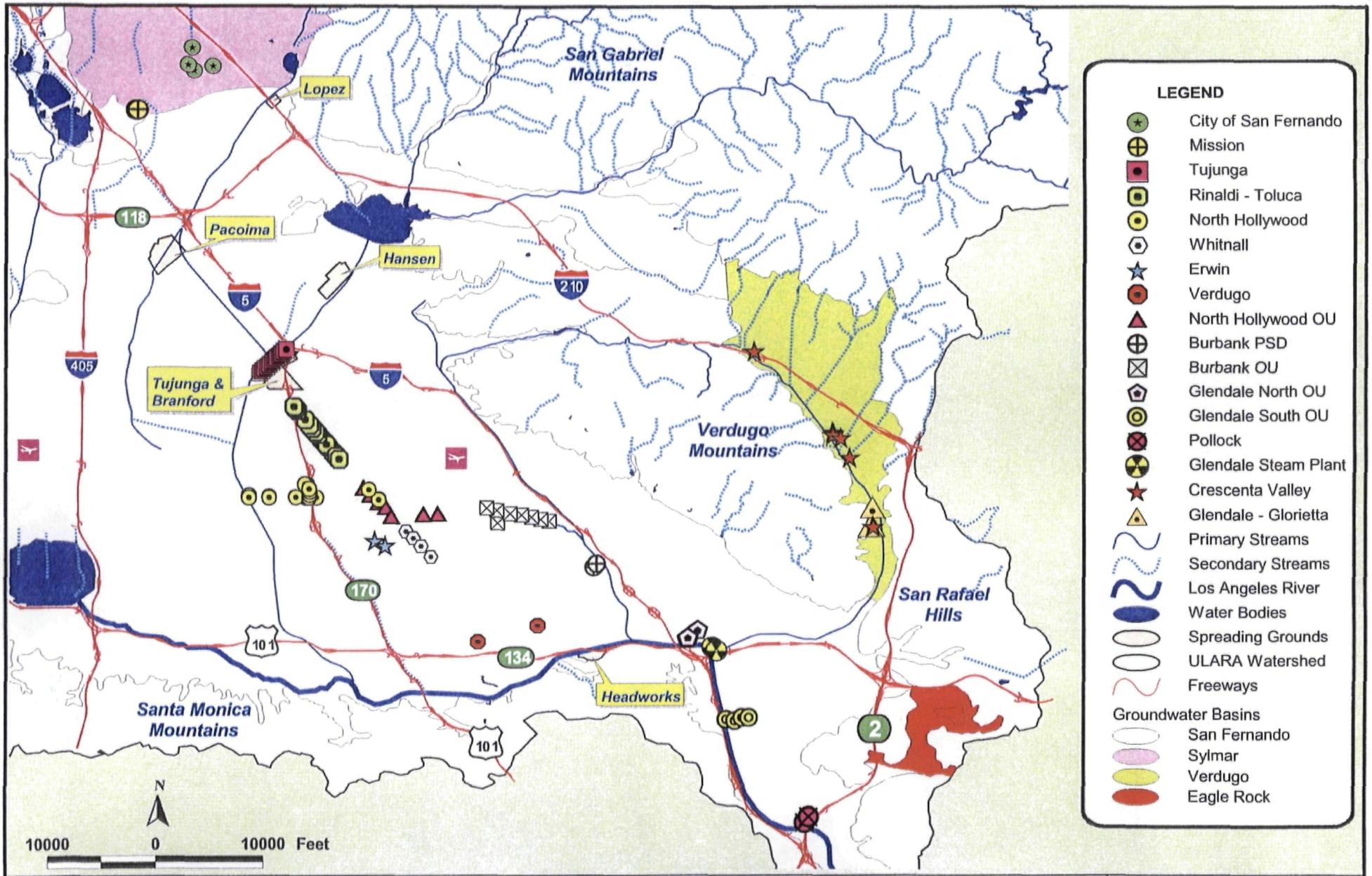
2005-06 Water Year ULARA Watermaster Report	Upper Los Angeles River Area: Components of Los Angeles River	PLATE 5



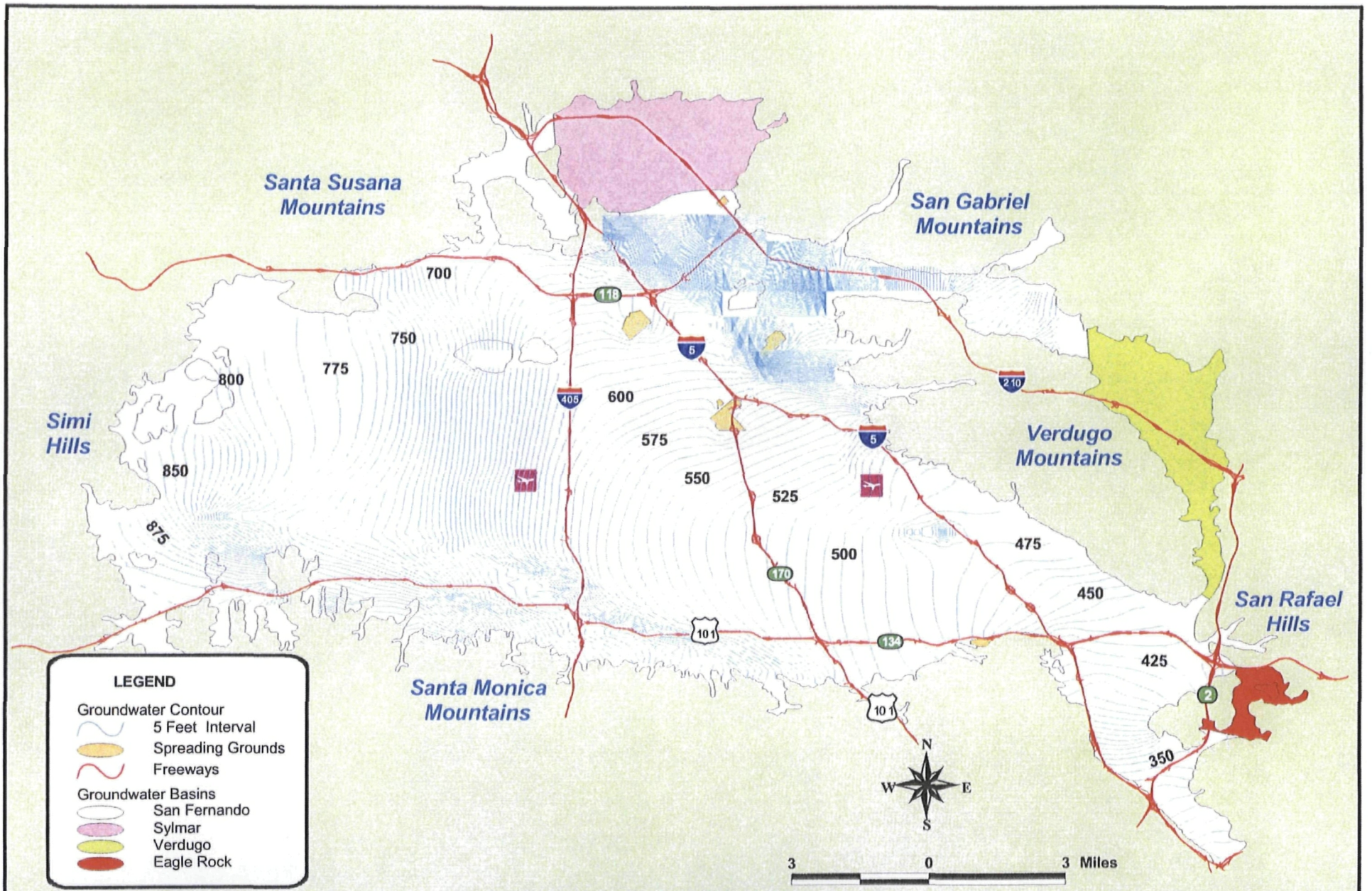
2005-06 Water Year ULARA Watermaster Report	Upper Los Angeles River Area: Landfill Locations	PLATE 6



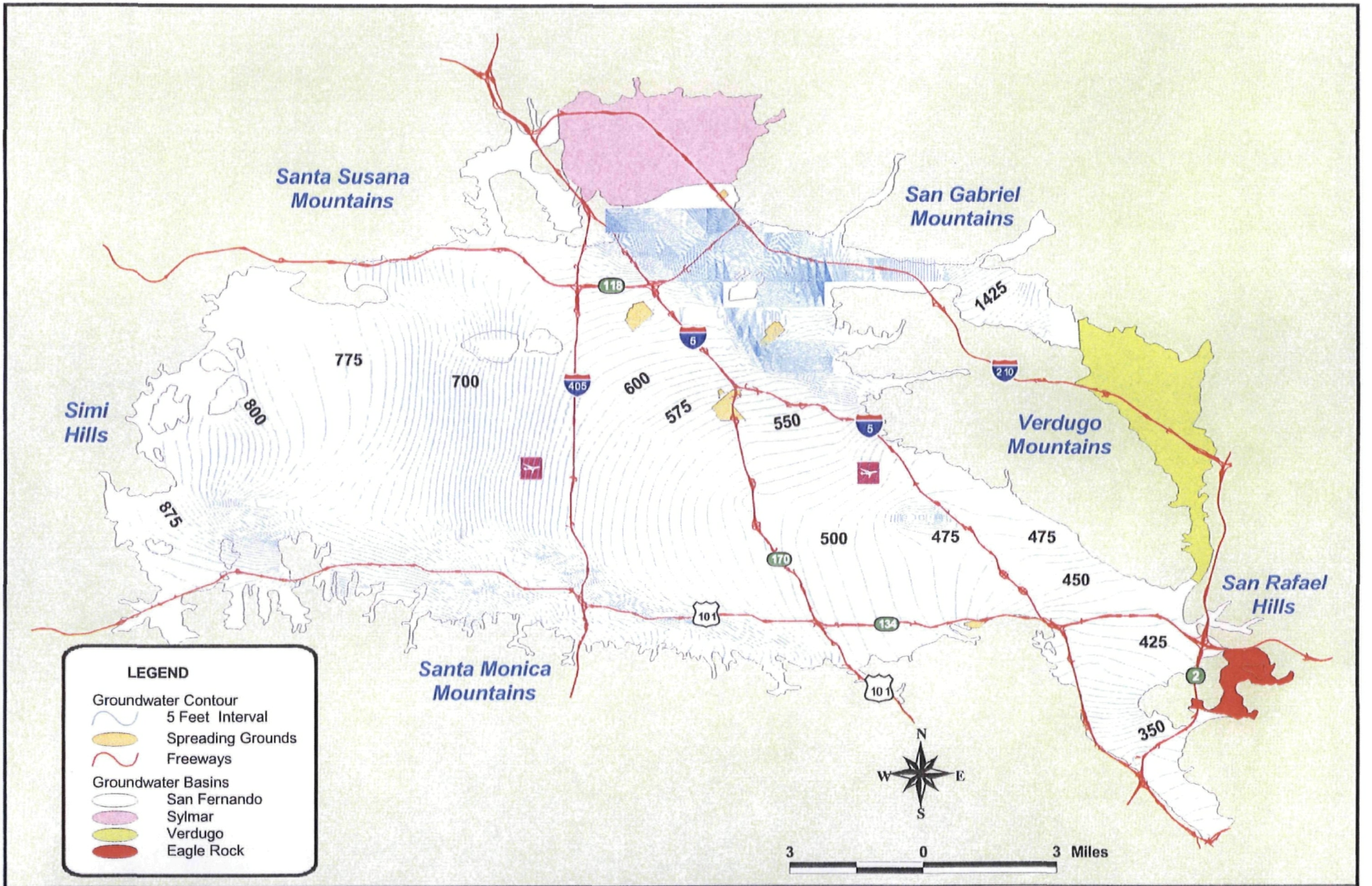
2005-06 Water Year ULARA Watermaster Report	Upper Los Angeles River Area: Los Angeles Bureau of Sanitation Sewer Construction Program for Commercial Parcels	PLATE 7



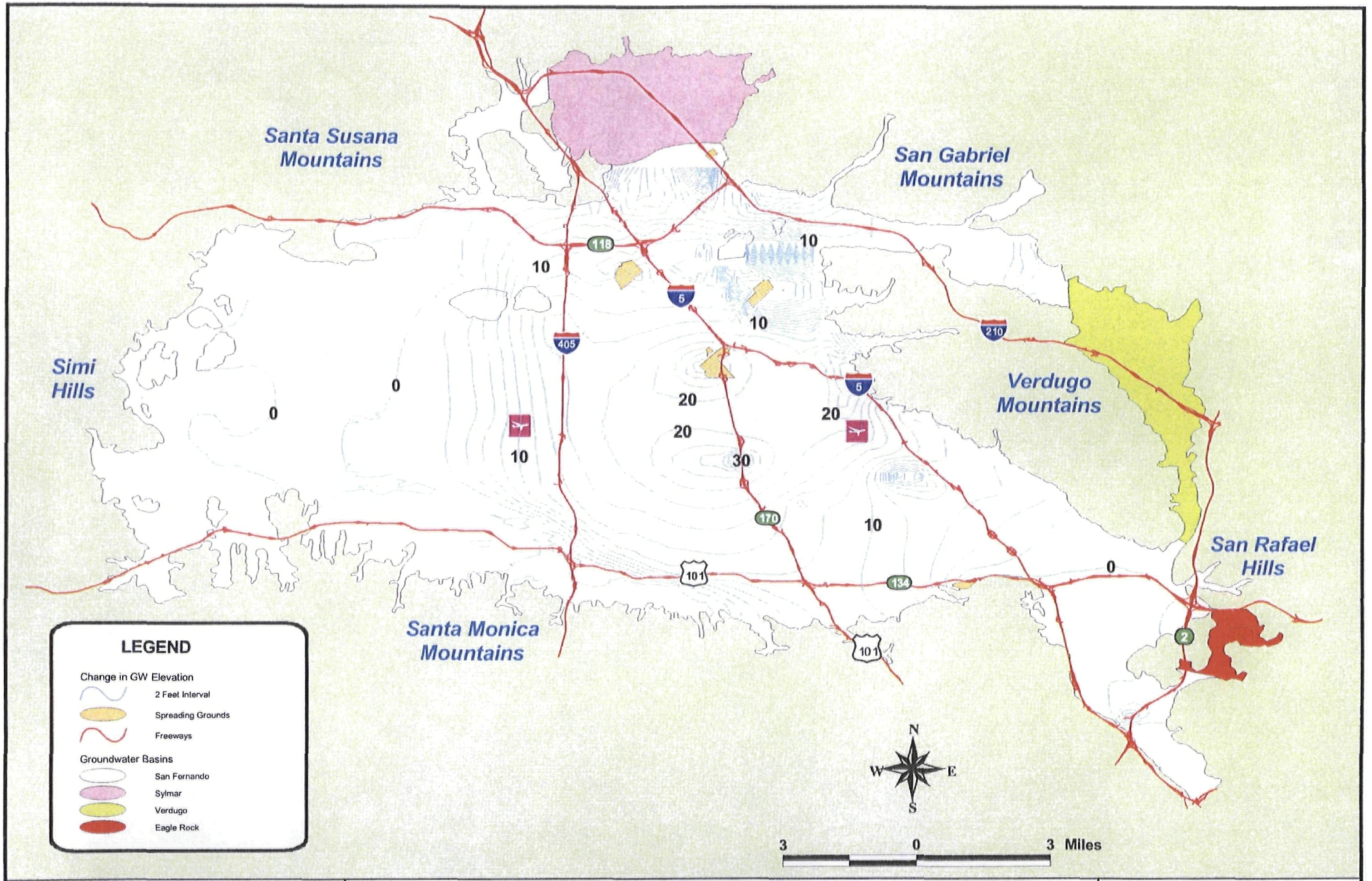
2005-06 Water Year ULARA Watermaster Report	**Upper Los Angeles River Area: Major Well Fields and Spreading Grounds**	**PLATE 8**



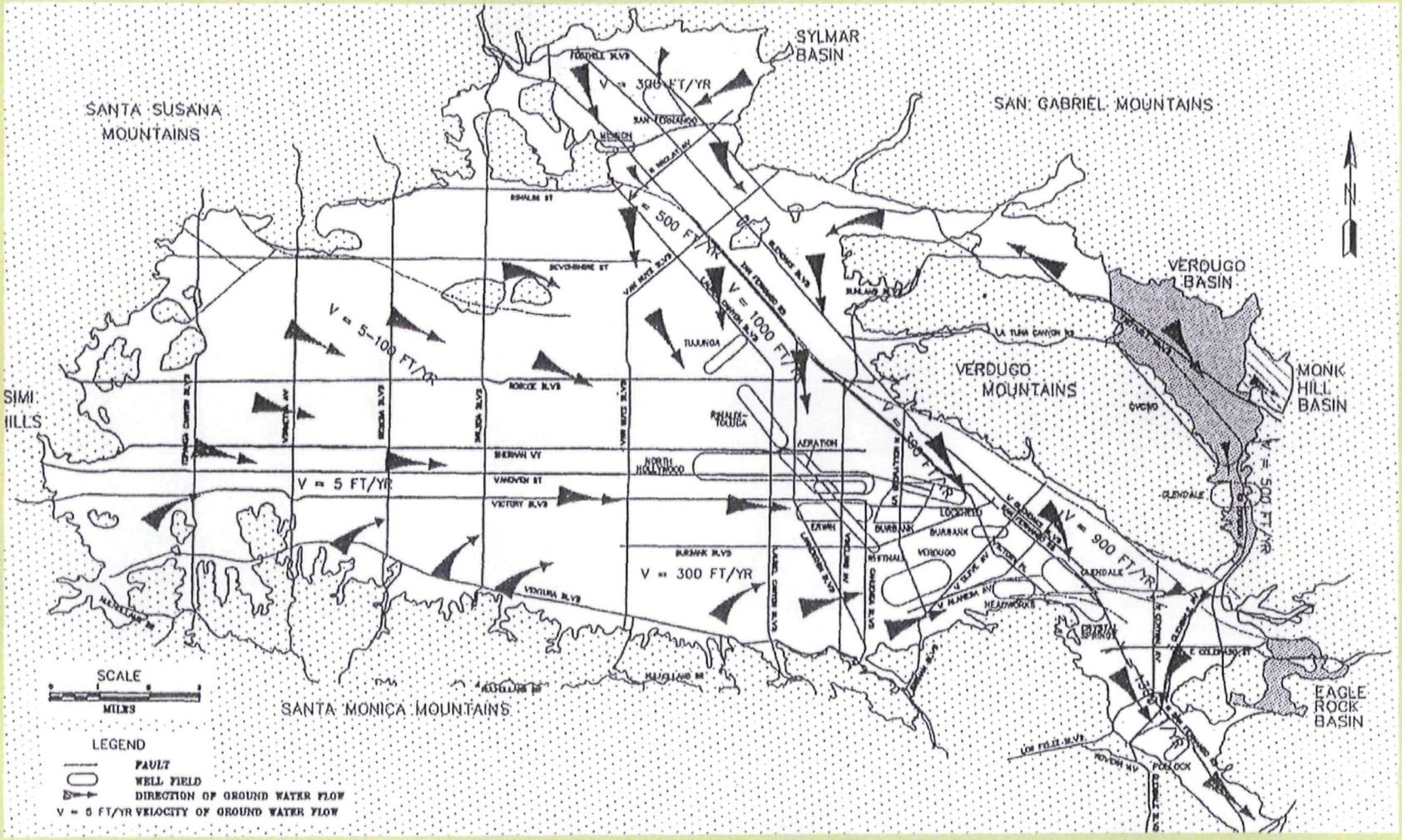
2005-06 Water Year ULARA Watermaster Report	Simulated Groundwater Contours Spring (April) 2006	PLATE 9



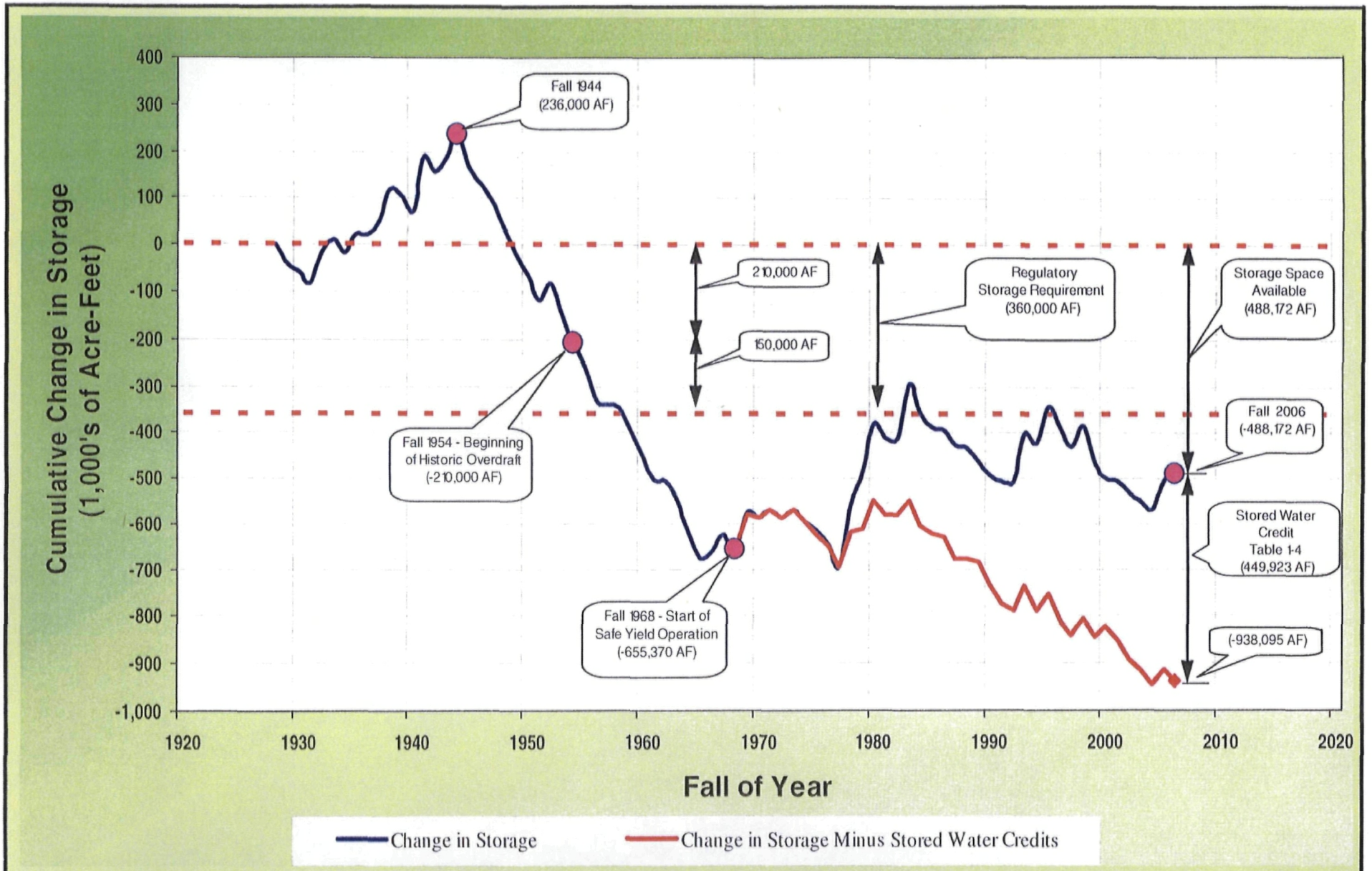
2005-06 Water Year ULARA Watermaster Report	Simulated Groundwater Contours Fall (September) 2006	PLATE 10



2005-06 Water Year ULARA Watermaster Report	Change in Groundwater Elevations Fall 2005 - Fall 2006	PLATE 11



2005-06 Water Year ULARA Watermaster Report	**Upper Los Angeles River Area: Estimated Directions and Velocities of Groundwater**	PLATE **12**



2005-06 Water Year ULARA Watermaster Report	**San Fernando Basin: Cumulative Change in Groundwater Storage**	PLATE 13

PLATE 13 B - ULARA WATERMASTER REPORT

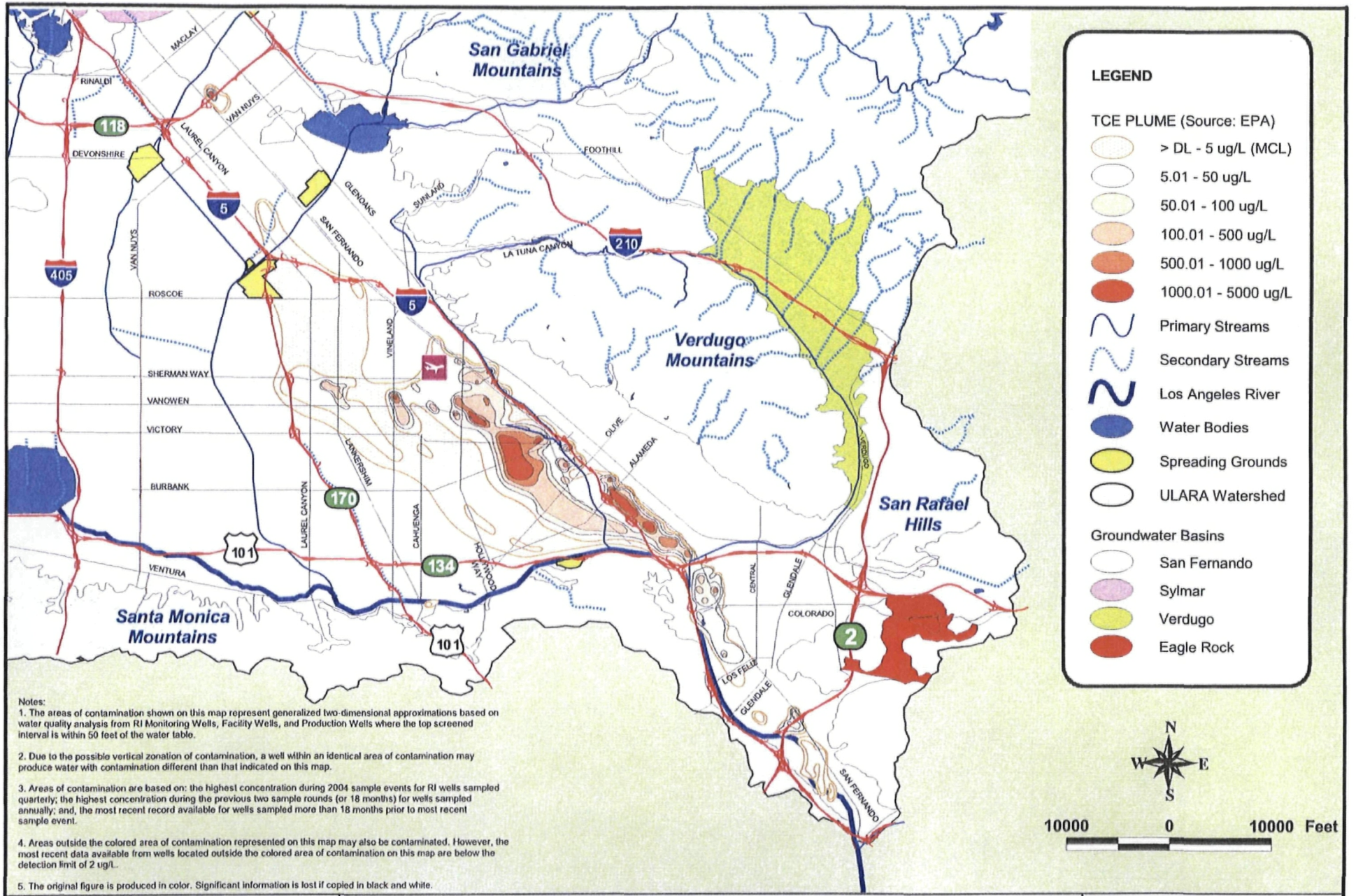
SAN FERNANDO BASIN
CUMULATIVE CHANGE IN GROUNDWATER STORAGE
(acre-feet)

Fall of Year	Change in Storage	Cumulative Chg. in Storage (1928)	Cumulative Chg. in Storage/1,000 AF	Cumulative Chg. in Storage (1944)	Cumulative Chg. in Storage/1,000 AF
1928	0	0	0		
1929	-41,510	-41,510	-42		
1930	-15,690	-57,200	-57		
1931	-26,320	-83,520	-84		
1932	67,030	-16,490	-16		
1933	26,640	10,150	10		
1934	-28,560	-18,410	-18		
1935	38,040	19,630	20		
1936	1,000	20,630	21		
1937	30,660	51,290	51		
1938	66,420	117,710	118		
1939	-12,540	105,170	105		
1940	-32,650	72,520	73		
1941	116,850	189,370	189		
1942	-31,230	158,140	158		
1943	31,030	189,170	189		
1944	47,200	236,370	236	0	0
1945	-74,180	162,190	162	-74,180	-74
1946	-33,300	128,890	129	-107,480	-107
1947	-41,200	87,690	88	-148,680	-149
1948	-52,770	34,920	35	-201,450	-201
1949	-56,360	-21,440	-21	-257,810	-258
1950	-43,390	-64,830	-65	-301,200	-301
1951	-53,290	-118,120	-118	-354,490	-354
1952	33,720	-84,400	-84	-320,770	-321
1953	-68,280	-152,680	-153	-389,050	-389
1954	-56,770	-209,450	-209	-445,820	-446
1955	-51,370	-260,820	-261	-497,190	-497
1956	-71,390	-332,210	-332	-568,580	-569
1957	-6,280	-338,490	-338	-574,860	-575
1958	-9,160	-347,650	-348	-584,020	-584
1959	-52,160	-399,810	-400	-636,180	-636
1960	-53,080	-452,890	-453	-689,260	-689
1961	-50,770	-503,660	-504	-740,030	-740
1962	-3,590	-507,250	-507	-743,620	-744
1963	-40,390	-547,640	-548	-784,010	-784
1964	-70,220	-617,860	-618	-854,230	-854
1965	-57,850	-675,710	-676	-912,080	-912
1966	14,970	-660,740	-661	-897,110	-897
1967	36,720	-624,020	-624	-860,390	-860
1968	-31,350	-655,370	-655	-891,740	-892
1969	79,240	-576,130	-576	-812,500	-813

PLATE 13 B - ULARA WATERMASTER REPORT

SAN FERNANDO BASIN
CUMULATIVE CHANGE IN GROUNDWATER STORAGE
(acre-feet)

Fall of Year	Change in Storage	Cumulative Chg. in Storage (1928)	Cumulative Chg. in Storage/1,000 AF	Cumulative Chg. in Storage (1944)	Cumulative Chg. in Storage/1,000 AF
1970	-9,740	-585,870	-586	-822,240	-822
1971	15,340	-570,530	-571	-806,900	-807
1972	-17,090	-587,620	-588	-823,990	-824
1973	17,020	-570,600	-571	-806,970	-807
1974	-21,820	-592,420	-592	-828,790	-829
1975	-22,580	-615,000	-615	-851,370	-851
1976	-30,090	-645,090	-645	-881,460	-881
1977	-50,490	-695,580	-696	-931,950	-932
1978	136,150	-559,430	-559	-795,800	-796
1979	78,080	-481,350	-481	-717,720	-718
1980	99,970	-381,380	-381	-617,750	-618
1981	-32,560	-413,940	-414	-650,310	-650
1982	-530	-414,470	-414	-650,840	-651
1983	121,090	-293,380	-293	-529,750	-530
1984	-63,180	-356,560	-357	-592,930	-593
1985	-31,690	-388,250	-388	-624,620	-625
1986	-7,980	-396,230	-396	-632,600	-633
1987	-31,940	-428,170	-428	-664,540	-665
1988	-5,000	-433,170	-433	-669,540	-670
1989	-30,550	-463,720	-464	-700,090	-700
1990	-29,941	-493,661	-494	-730,031	-730
1991	-14,122	-507,783	-508	-744,153	-744
1992	411	-507,372	-507	-743,742	-744
1993	106,317	-401,055	-401	-637,425	-637
1994	-22,238	-423,293	-423	-659,663	-660
1995	79,132	-344,161	-344	-580,531	-581
1996	-49,223	-393,384	-393	-629,754	-630
1997	-35,737	-429,121	-429	-665,491	-665
1998	44113	-385,008	-385	-621,378	-621
1999	-82673	-467,681	-468	-704,051	-704
2000	-31,044	-498,725	-499	-735,095	-735
2001	-6,930	-505,655	-506	-742,025	-742
2002	-27,094	-532,749	-533	-769,119	-769
2003	-15,835	-548,584	-549	-784,954	-785
2004	-22,367	-570,951	-571	-807,321	-807
2005	66,476	-504,475	-504	-740,845	-741
2006	16,303	-488,172	-488	-724,542	-725



Notes:

1. The areas of contamination shown on this map represent generalized two-dimensional approximations based on water quality analysis from RI Monitoring Wells, Facility Wells, and Production Wells where the top screened interval is within 50 feet of the water table.

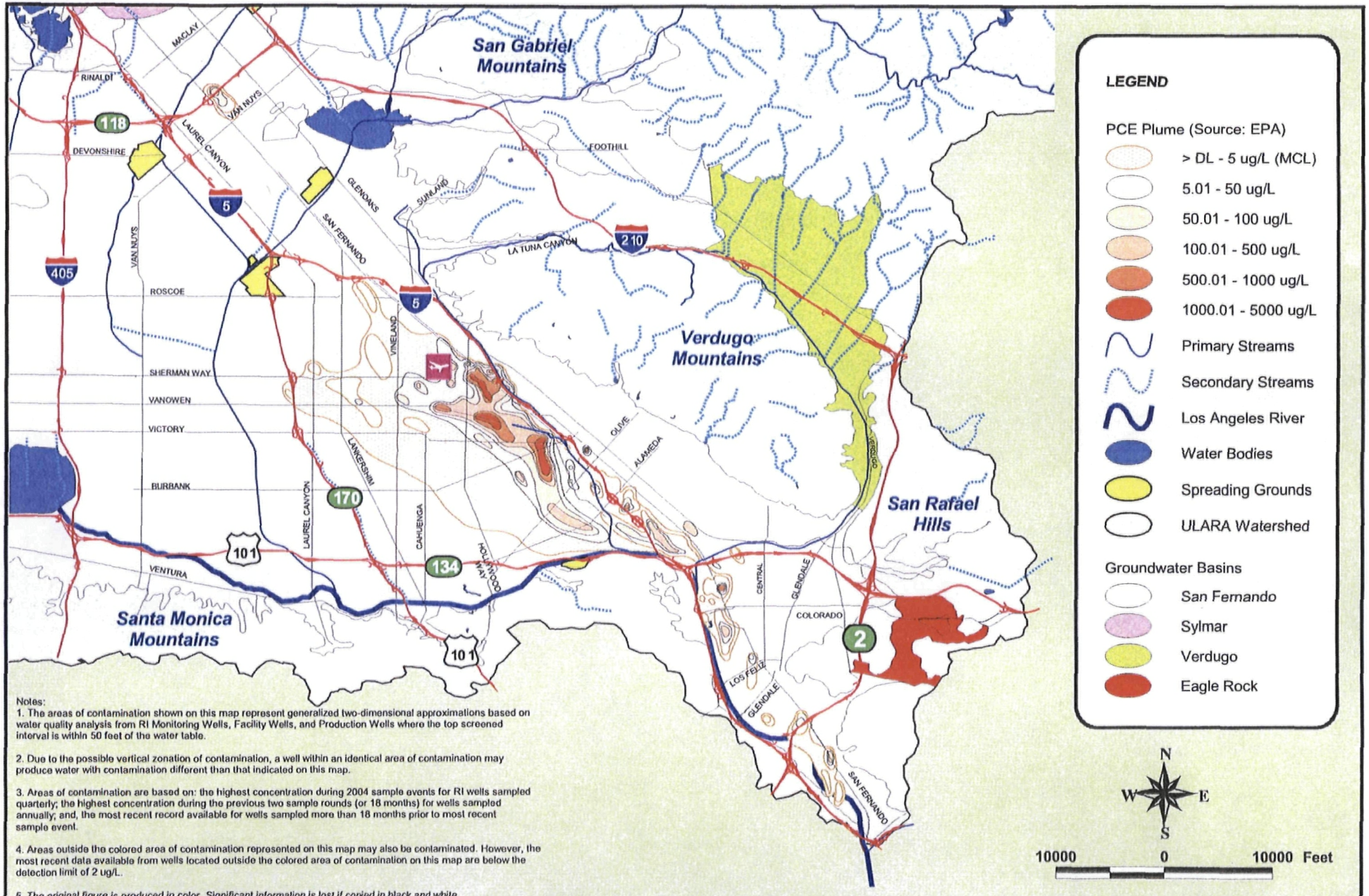
2. Due to the possible vertical zonation of contamination, a well within an identical area of contamination may produce water with contamination different than that indicated on this map.

3. Areas of contamination are based on: the highest concentration during 2004 sample events for RI wells sampled quarterly; the highest concentration during the previous two sample rounds (or 18 months) for wells sampled annually; and, the most recent record available for wells sampled more than 18 months prior to most recent sample event.

4. Areas outside the colored area of contamination represented on this map may also be contaminated. However, the most recent data available from wells located outside the colored area of contamination on this map are below the detection limit of 2 ug/L.

5. The original figure is produced in color. Significant information is lost if copied in black and white.

2005-06 Water Year ULARA Watermaster Report	Upper Los Angeles River Area: TCE Contamination (ug/L) in Shallow Zone in 2005	PLATE 14



Notes:

1. The areas of contamination shown on this map represent generalized two-dimensional approximations based on water quality analysis from RI Monitoring Wells, Facility Wells, and Production Wells where the top screened interval is within 50 feet of the water table.

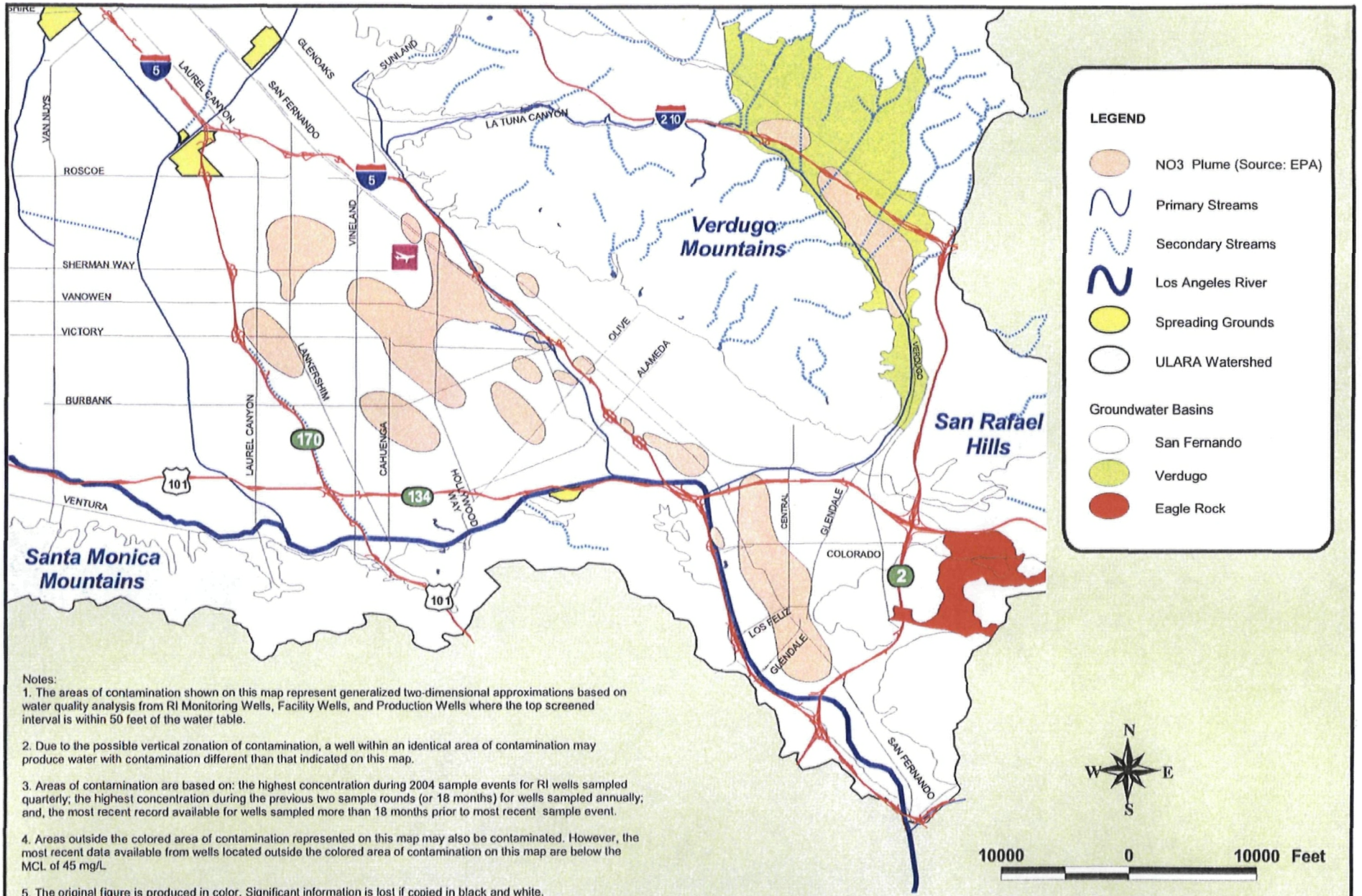
2. Due to the possible vertical zonation of contamination, a well within an identical area of contamination may produce water with contamination different than that indicated on this map.

3. Areas of contamination are based on: the highest concentration during 2004 sample events for RI wells sampled quarterly; the highest concentration during the previous two sample rounds (or 18 months) for wells sampled annually; and, the most recent record available for wells sampled more than 18 months prior to most recent sample event.

4. Areas outside the colored area of contamination represented on this map may also be contaminated. However, the most recent data available from wells located outside the colored area of contamination on this map are below the detection limit of 2 ug/L.

5. The original figure is produced in color. Significant information is lost if copied in black and white.

2005-06 Water Year ULARA Watermaster Report	**Upper Los Angeles River Area: PCE Contamination (ug/L) in Shallow Zone in 2005**	PLATE 15



Notes:

1. The areas of contamination shown on this map represent generalized two-dimensional approximations based on water quality analysis from RI Monitoring Wells, Facility Wells, and Production Wells where the top screened interval is within 50 feet of the water table.

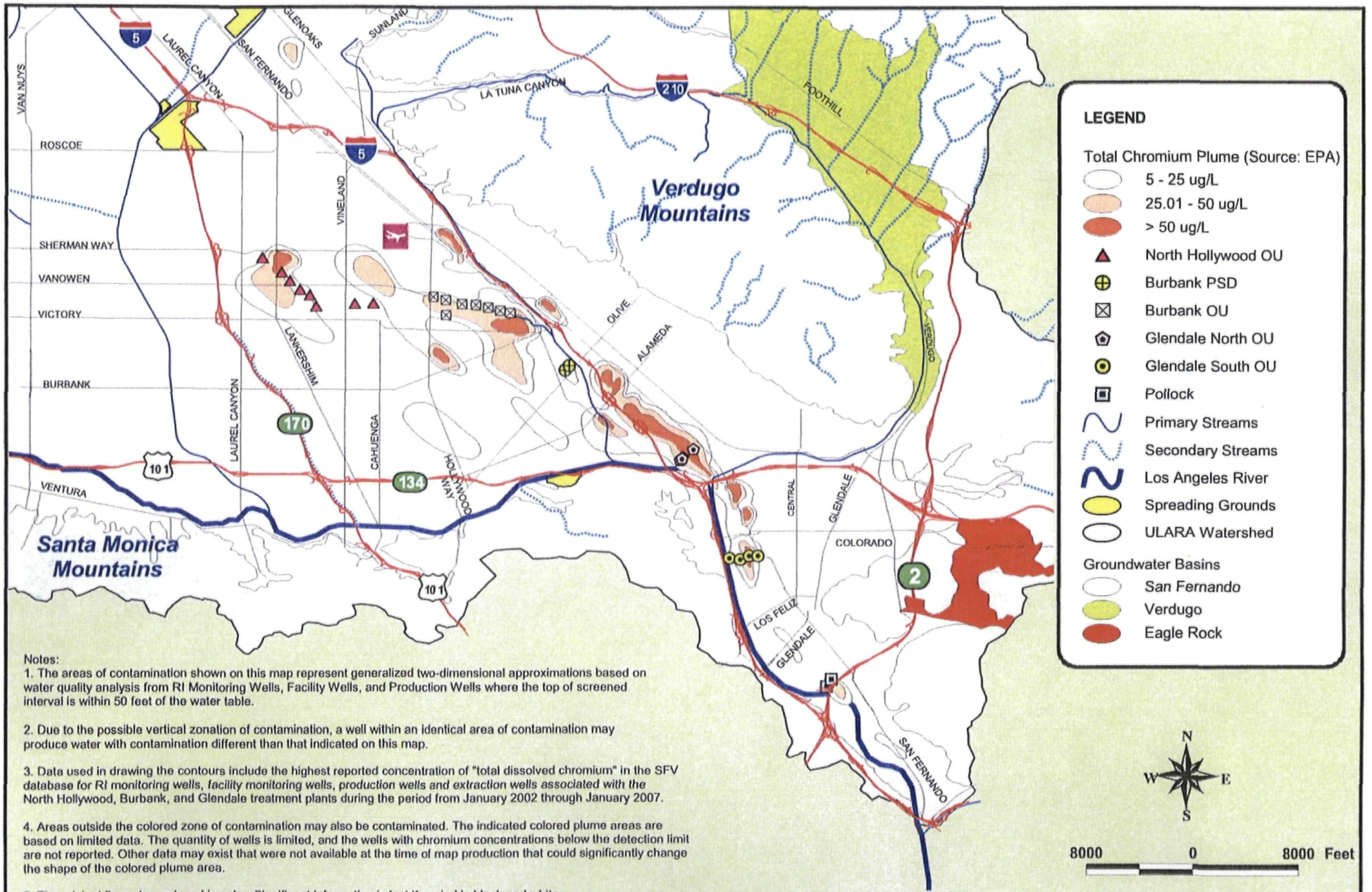
2. Due to the possible vertical zonation of contamination, a well within an identical area of contamination may produce water with contamination different than that indicated on this map.

3. Areas of contamination are based on: the highest concentration during 2004 sample events for RI wells sampled quarterly; the highest concentration during the previous two sample rounds (or 18 months) for wells sampled annually; and, the most recent record available for wells sampled more than 18 months prior to most recent sample event.

4. Areas outside the colored area of contamination represented on this map may also be contaminated. However, the most recent data available from wells located outside the colored area of contamination on this map are below the MCL of 45 mg/L.

5. The original figure is produced in color. Significant information is lost if copied in black and white.

2005-06 Water Year ULARA Watermaster Report	Upper Los Angeles River Area: NO3 Contamination (mg/L) in Shallow Zone in 2005	PLATE 16



Notes:
1. The areas of contamination shown on this map represent generalized two-dimensional approximations based on water quality analysis from RI Monitoring Wells, Facility Wells, and Production Wells where the top of screened interval is within 50 feet of the water table.

2. Due to the possible vertical zonation of contamination, a well within an identical area of contamination may produce water with contamination different than that indicated on this map.

3. Data used in drawing the contours include the highest reported concentration of "total dissolved chromium" in the SFV database for RI monitoring wells, facility monitoring wells, production wells and extraction wells associated with the North Hollywood, Burbank, and Glendale treatment plants during the period from January 2002 through January 2007.

4. Areas outside the colored zone of contamination may also be contaminated. The indicated colored plume areas are based on limited data. The quantity of wells is limited, and the wells with chromium concentrations below the detection limit are not reported. Other data may exist that were not available at the time of map production that could significantly change the shape of the colored plume area.

5. The original figure is produced in color. Significant information is lost if copied in black and white.

2005-06 Water Year ULARA Watermaster Report	Upper Los Angeles River Area: Total Dissolved Chromium Contamination (ug/L) in Shallow Zone in 2006	PLATE 17

APPENDIX A
GROUNDWATER EXTRACTIONS

2005-2006 Water Year
(acre-feet)

LACDPW Well No.	Owner Well No.	2005 Oct.	Nov.	Dec.	2006 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
San Fernando Basin														
A. W. Warner Properties														
Plaza Six		1.24	1.50	1.39	1.28	2.12	0.77	1.67	1.61	1.72	1.05	1.82	1.05	17.22
A. W. Warner Properties														
Plaza Three		0.94	1.17	1.08	0.96	1.35	1.23	1.51	1.42	1.49	0.90	1.56	0.89	14.50
Angelica Healthcare Services		(abandoned 12/97)												
3934A	M050A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Auto Stiegler														
—	—	1.05	1.53	1.44	1.45	1.49	2.06	1.39	0.92	0.59	0.56	0.74	0.51	13.73
Avalon Encino														
—	—	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.19
Boeing (Rockwell International No further pumping until 2000)														
—	E-1 to E-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boeing Santa Susana Field Laboratory														
Delta	WS-09A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RD-24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Burbank, City of														
3841C	6A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3882P	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3851E	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3851K	13A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3882T	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3841G	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Burbank Operable Unit														
3871L	VO-1	65.29	30.11	97.82	100.45	4.41	49.97	67.29	115.52	63.81	87.85	54.63	47.99	785.14
3861G	VO-2	123.70	58.23	158.95	156.23	141.96	73.83	97.27	125.09	162.09	59.66	81.09	94.41	1,332.51
3861K	VO-3	126.41	67.07	125.46	57.32	45.98	54.27	66.48	89.21	43.57	178.11	141.76	146.63	1,142.27
3861L	VO-4	75.86	0.06	0.00	78.13	6.03	115.93	107.68	79.52	166.27	0.50	75.58	94.60	800.16
3850X	VO-5	84.78	41.06	166.04	95.74	27.20	0.73	0.00	1.10	113.96	185.49	159.66	121.16	996.92
3850Z	VO-6	116.92	77.08	108.62	237.58	133.46	78.63	141.49	258.26	242.87	208.11	235.58	253.23	2,091.83
3850AB	VO-7	0.00	18.26	126.17	126.17	27.19	105.27	102.56	107.38	79.17	112.85	151.35	169.35	1,125.72
3851C	V0-8	183.94	102.00	198.05	57.78	162.92	56.46	117.79	199.43	186.67	189.11	189.22	190.19	1,833.56
	Total:	776.90	393.87	981.11	909.40	549.15	535.09	700.56	975.51	1,058.41	1,021.68	1,088.87	1,117.56	10,108.11
CalMat														
4916A	2	0.00	0.00	0.00	0.00	0.00	7.17	12.92	2.59	27.05	28.46	74.23	23.55	175.97
4916	3	38.40	63.31	65.22	62.59	58.66	65.49	23.59	0.00	62.23	66.10	32.38	54.36	592.33
4916(x)	1	61.29	101.46	85.97	0.00	0.00	3.49	49.79	0.52	133.27	121.64	41.44	95.04	693.91
Sheldon Pond		134.18	129.56	134.32	124.09	124.70	57.01	32.22	137.81	24.84	13.60	37.71	14.15	964.19
	Total:	233.87	294.33	285.51	186.68	183.36	133.16	118.52	140.92	247.39	229.80	185.76	187.10	2,426.40
First Financial Plaza Site														
N/A	F.F.P.S.	2.88	2.24	2.76	3.46	1.76	3.32	5.10	3.57	3.76	2.52	2.75	2.16	36.28

2005-2006 Water Year
(acre-feet)

LACDPW Well No.	Owner Well No.	2005 Oct.	Nov.	Dec.	2006 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
San Fernando Basin (cont'd)														
Forest Lawn Memorial Park														
3947B	3	12.30	11.21	1.41	0.00	3.52	0.00	1.13	11.07	19.54	16.66	16.47	6.73	100.04
3947C	4	11.82	10.53	1.27	0.00	3.25	0.00	0.00	1.98	18.51	15.57	14.86	6.35	84.14
3858K	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3947M	8	0.00	0.54	11.21	7.68	22.36	3.08	2.78	37.38	8.24	50.12	58.32	56.99	258.70
	Total:	24.12	22.28	13.89	7.68	29.13	3.08	3.91	50.43	46.29	82.35	89.65	70.07	442.88
Glendale, City of														
3924N	STPT 1	4.27	1.96	3.59	0.77	0.18	4.54	2.98	34.19	0.55	105.94	199.27	238.06	596.30
3924R	STPT 2	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.33
GVENT	GVENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	4.36	1.99	3.59	0.77	0.18	4.54	2.98	34.19	0.76	105.94	199.27	238.06	596.63
Glendale North/South														
	GN-1	69.27	84.51	92.07	94.79	83.40	91.99	89.02	92.27	91.24	94.92	95.31	79.59	1,058.38
	GN-2	37.03	27.98	72.98	95.03	77.37	71.00	66.49	80.85	86.96	79.09	69.57	28.19	792.54
	GN-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.98	36.78	64.76
	GN-4	235.19	67.89	174.02	234.54	210.44	236.85	228.86	235.73	226.33	232.95	233.40	225.83	2,542.03
	GS-1	25.12	0.00	34.26	49.32	45.38	39.47	45.07	49.30	49.42	53.98	32.49	11.98	435.79
	GS-2	39.98	67.41	72.95	66.99	69.98	75.05	60.25	55.69	70.02	63.18	65.80	56.22	763.52
	GS-3	33.73	39.97	41.13	40.79	36.35	40.68	38.71	41.04	39.15	40.76	40.03	20.84	453.18
	GS-4	40.96	67.31	64.77	61.03	63.92	68.33	56.00	52.15	67.98	49.79	26.08	48.38	666.70
	Total:	481.28	355.07	552.18	642.49	586.84	623.37	584.40	607.03	631.10	614.67	590.66	507.81	6,776.90
Greeff Fabrics														
—	—	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grigsby, Wood														
—	—									0.01	0.01	0.02	0.01	0.05
Hathaway (successor to deMille)														
—	1	1.23	2.27	1.47	1.09	0.71	0.48	1.46	2.65	2.67	2.50	2.24	1.31	20.08
	2	1.74	1.23	1.39	1.47	1.20	1.78	1.30	1.27	1.61	1.88	2.09	3.01	19.97
	3	0.17	0.05	0.06	0.02	0.21	0.06	0.00	0.00	0.00	0.00	0.10	0.62	1.29
	Total:	3.14	3.55	2.92	2.58	2.12	2.32	2.76	3.92	4.28	4.38	4.43	4.94	41.34
Home Depot U.S.A., Inc.														
—		0.00	0.00	0.00	0.00	0.00	0.09	0.33	0.44	0.44	0.46	0.50	0.99	3.25
Jose Diaz														
—		0.00	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.04	0.04	0.05	0.36
K Atamian														
—		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Menasco/Coltec Site														
—		0.06	0.05	0.03	0.04	0.05	0.05	0.03	0.01	0.01	0.01	0.02	0.03	0.39
Metropolitan Transportation Authority														
—	1065	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
—	1075	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
—	1130	0.50	0.62	0.38	0.45	0.38	0.42	0.46	0.49	0.47	0.29	0.40	0.32	5.18
—	1140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
—	1150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
—	1070	4.80	3.61	3.49	3.94	3.25	3.52	3.08	3.74	3.19	3.17	3.44	3.06	42.29
—	1133	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
	Total:	5.30	4.23	3.87	4.40	3.64	3.94	3.54	4.23	3.66	3.46	3.84	3.38	47.49

2005-2006 Water Year
(acre-feet)

LACDPW Well No.	Owner Well No.	2005 Oct.	Nov.	Dec.	2006 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
San Fernando Basin (cont'd)														
Metropolitan Water District														
	Jensen	19.10	17.90	20.10	16.90	9.00	17.90	19.40	20.50	19.30	20.10	19.90	18.60	218.70
Middle Ranch (Successor to deMille)														
4931 x	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4940-1	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
new	5	0.03	0.03	0.01	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11
4940-3	6	0.49	0.55	0.51	0.33	0.11	0.29	0.27	0.34	0.24	0.24	0.11	0.48	3.96
4940-2	7	0.00	0.00	0.00	0.08	0.04	0.00	0.00	0.13	0.49	0.49	0.68	0.77	2.68
new	8	0.00	0.00	0.00	0.28	0.07	0.00	0.00	0.00	0.01	0.01	0.01	0.62	1.00
	Spring 1&2	0.02	0.03	0.02	0.05	0.05	0.03	0.01	0.03	0.03	0.03	0.03	0.04	0.37
	Total	0.54	0.61	0.54	0.77	0.28	0.32	0.28	0.50	0.77	0.77	0.83	1.91	8.12
Micro Matics														
JEW	1	0.26	0.07	0.44	0.33	0.23	0.28	0.00	0.00	0.00	0.40	0.15	0.18	2.34
JEW	2	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.10
RMW	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	0.32	0.07	0.44	0.33	0.23	0.28	0.00	0.00	0.00	0.40	0.18	0.19	2.44
Mobil Oil Corporation														
---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(NEIS) Northeast Interceptor Sewer City of LA BOS														
---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Raytheon (Formerly Hughes Missile Systems)														
----	----	0.08	0.06	0.05	0.06	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.30
Quaranto # 010004														
---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Sears Roebuck & Co. (Well disconnected 10/2000)														
3945	3945	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sportsmen's Lodge														
3785A	1	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.02	0.07
3M-Pharmaceuticals														
---	---	5.25	4.86	4.87	5.39	5.40	5.89	5.69	4.74	4.84	5.22	5.32	4.95	62.42
Tesoro Petroleum Corporation														
---	MW-15	0.09	0.01	0.00	0.00	0.02	0.35	0.03	0.18	0.00	0.14	0.00	0.08	0.90
Toluca Lake Property Owners Association														
3845F	3845F	2.32	0.55	0.56	0.57	0.52	0.20	0.69	1.22	3.13	6.57	7.62	6.40	30.35
Trillium Corporation														
Well #1	---	2.66	2.37	3.14	1.73	1.88	1.85	3.12	2.45	2.44	1.61	2.69	1.95	27.89
Well #2	---	2.15	1.55	1.89	1.29	0.77	0.10	0.00	0.00	0.00	0.00	0.00	0.00	7.75
	Total:	4.81	3.92	5.03	3.02	2.65	1.95	3.12	2.45	2.44	1.61	2.69	1.95	35.64
Valhalla Memorial Park and Mortuary														
3840K	4	49.54	20.75	20.75	12.27	12.27	12.27	9.78	37.10	70.68	71.42	76.03	37.99	430.85
Waste Management Disposal Services of Calif.														
4916D		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2005-2006 Water Year
(acre-feet)

LACDPW Well No.	Owner Well No.	2005 Oct.	Nov.	Dec.	2006 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
San Fernando Basin (cont'd)														
Walt Disney Pictures and Television (wells inactive/ not abandoned)														
3874E	EAST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3874F	WEST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3874G	NORTH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walt Disney Riverside Building														
—	—	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waterworks District No. 21														
—	—	3.55	3.06	3.29	3.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.12
Wildlife Waystation														
Rehab Canyon		0.50	0.39	0.45	0.40	0.27	0.34	0.38	0.29	0.29	0.29	0.27	0.29	4.16
Foreman Hill Spring		0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.20
	Total:	0.51	0.40	0.46	0.41	0.29	0.36	0.40	0.31	0.31	0.31	0.29	0.31	4.36
Los Angeles, City of														
Aeration (A)														
3800E	A-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810U	A-2	12.76	19.28	16.07	18.23	15.54	18.43	13.71	22.96	13.98	17.95	15.77	24.72	209.40
3810V	A-3	11.36	30.30	27.13	27.87	22.31	30.69	22.77	41.55	32.28	30.49	26.97	40.15	343.87
3810W	A-4	14.85	18.30	19.03	20.98	20.75	21.79	18.39	35.10	21.63	25.71	18.89	27.64	263.06
3820H	A-5	7.19	9.25	1.31	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	17.82
3821J	A-6	24.10	30.39	21.97	28.81	0.00	0.00	0.00	8.65	23.23	31.45	30.72	56.82	256.14
3830P	A-7	28.42	39.14	34.37	38.64	24.61	26.63	0.00	8.72	32.62	37.95	29.64	53.54	354.28
3831K	A-8	28.67	37.53	31.38	34.99	30.81	26.61	12.19	0.00	28.83	34.04	8.29	48.26	321.60
	A Total:	127.35	184.19	151.26	169.52	114.02	124.22	67.06	116.98	152.57	177.59	130.28	251.13	1,766.17
Erwin (E)														
3831H	E-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821I	E-2A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3831G	E-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821F	E-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3831F	E-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821H	E-6	0.00	0.16	0.00	26.61	0.11	0.53	0.21	44.19	352.11	363.27	279.82	340.79	1,407.80
3811F	E-10	71.44	0.07	0.00	15.73	0.07	0.09	0.05	16.44	136.39	136.16	99.72	116.87	593.03
	E Total:	71.44	0.23	0.00	42.34	0.18	0.62	0.26	60.63	488.50	499.43	379.54	457.66	2,000.83
Headworks (H)		Inactive Well Field												
3893Q	H-27A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3893R	H-28A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3893S	H-29A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3893T	H-30A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	H Total:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2005-2006 Water Year
(acre-feet)

LACDPW Well No.	Owner Well No.	2005 Oct.	Nov.	Dec.	2006 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
						San Fernando Basin (cont'd)								
North Hollywood (NH)														
3800	NH-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3780A	NH-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.14
3770	NH-7	25.39	0.07	0.16	0.00	0.02	0.02	0.05	0.05	0.02	0.05	0.05	0.05	25.93
3810	NH-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810A	NH-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810B	NH-14A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3820D	NH-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3820C	NH-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3820B	NH-18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3830D	NH-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3830C	NH-20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3830B	NH-21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3790C	NH-22	113.02	0.00	0.00	0.00	0.23	220.20	0.00	0.37	0.00	51.54	281.36	382.30	1,049.02
3790D	NH-23	271.49	0.00	0.32	0.00	0.18	237.01	0.00	0.18	0.25	0.21	0.30	0.28	510.22
3800C	NH-24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3790F	NH-25	181.27	0.00	0.18	0.00	165.22	144.47	0.00	0.00	10.61	193.46	199.10	264.37	1,158.68
3790E	NH-26	163.38	1.06	0.41	0.00	0.16	174.82	0.00	0.39	0.00	40.43	220.55	286.75	887.95
3820F	NH-27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810K	NH-28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810L	NH-29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3800D	NH-30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3770C	NH-32	157.53	0.87	0.00	0.00	0.00	0.00	0.09	0.00	0.09	0.07	0.11	0.11	158.87
3780C	NH-33	209.78	0.25	0.48	0.00	0.14	0.09	0.11	0.00	0.00	39.44	223.26	314.10	787.65
3790G	NH-34	0.21	0.00	0.37	0.00	83.06	312.83	0.57	0.67	184.60	445.91	367.93	481.04	1,877.19
3830N	NH-35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3790H	NH-36	0.00	0.00	0.00	0.00	0.14	0.21	0.55	0.64	0.00	52.04	288.34	384.32	726.24
3790J	NH-37	0.00	0.00	0.41	0.00	0.00	0.14	0.14	0.46	0.00	0.16	0.30	0.23	1.84
3810M	NH-38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810N	NH-39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810P	NH-40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810Q	NH-41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810R	NH-42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3790K	NH-43A	0.23	0.39	0.37	0.00	80.28	0.00	0.00	0.00	0.00	0.00	0.00	380.39	461.66
3790L	NH-44	224.43	0.14	0.41	0.00	66.02	285.47	0.00	55.07	223.28	353.37	301.29	402.57	1,912.05
3790M	NH-45	0.28	0.28	0.23	0.00	92.72	0.25	0.46	0.71	0.00	57.99	138.45	525.80	817.17
	NH Total:	1,347.01	3.06	3.34	0.00	488.17	1,375.51	1.97	58.54	418.99	1,234.67	2,021.04	3,422.31	10,374.61
Pollock (P)														
3959E	P-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.28	266.67	262.99	187.81	817.75
3958H	P-6	106.34	144.77	177.30	146.51	205.07	7.94	24.17	187.49	78.79	175.16	190.93	179.41	1,623.88
3958J	P-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	P Total:	106.34	144.77	177.30	146.51	205.07	7.94	24.17	187.49	179.07	441.83	453.92	367.22	2,441.63

2005-2006 Water Year
(acre-feet)

LACDPW Well No.	Owner Well No.	2005 Oct.	Nov.	Dec.	2006 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
San Fernando Basin (cont'd)														
Rinaldi-Toluca (RT)														
4909E	RT-1	0.46	0.23	0.00	0.55	0.25	0.48	0.32	0.30	0.25	0.80	0.00	1.19	4.83
4898A	RT-2	0.39	0.25	0.00	0.60	0.23	0.55	0.30	0.34	0.28	0.73	0.00	1.10	4.77
4898B	RT-3	1.01	0.34	0.00	0.34	0.64	1.35	0.00	0.62	0.28	1.47	0.57	0.00	6.62
4898C	RT-4	0.94	0.30	0.00	0.23	471.90	0.55	0.00	0.62	251.68	529.48	595.34	539.76	2,390.80
4898D	RT-5	1.47	0.00	0.53	0.99	215.27	0.51	0.00	0.53	236.07	447.38	464.81	479.32	1,846.88
4898E	RT-6	277.69	0.48	1.26	0.00	517.03	218.48	0.00	0.37	252.75	465.86	343.48	0.00	2,077.40
4898F	RT-7	0.25	0.39	1.17	0.64	0.94	0.30	0.00	85.12	225.62	383.84	165.75	0.00	864.02
4898G	RT-8	292.84	66.07	155.19	220.57	390.29	322.68	217.93	79.78	295.66	333.03	383.95	339.69	3,097.68
4898H	RT-9	0.25	0.30	0.00	0.78	1.26	0.44	0.00	0.18	0.28	61.50	109.25	510.86	685.10
4909G	RT-10	0.53	0.28	0.00	0.39	0.39	0.46	0.00	0.44	0.41	0.76	0.00	1.17	4.83
4909K	RT-11	0.53	0.25	0.00	0.25	0.21	0.55	0.34	0.30	0.28	0.51	0.00	1.10	4.32
4909H	RT-12	1.58	0.23	0.00	0.39	0.46	1.19	0.41	0.55	0.39	0.80	0.00	1.15	7.15
4909J	RT-13	0.32	0.25	0.00	0.39	0.25	0.78	0.37	0.28	0.28	0.76	0.00	0.92	4.60
4909L	RT-14	1.77	287.14	0.00	0.09	0.07	1.12	0.44	0.28	0.28	0.55	0.51	0.53	292.78
4909M	RT-15	0.37	0.28	0.00	0.39	0.23	0.51	0.25	0.25	0.25	0.78	0.62	0.46	4.39
	RT Total:	580.40	356.79	158.15	226.60	1,599.42	549.95	220.36	169.96	1,264.76	2,228.25	2,064.28	1,877.25	11,296.17
Tujunga (T)														
4887C	T-1	425.28	0.00	186.27	74.75	462.76	18.27	0.30	0.34	0.39	23.46	335.45	717.93	2,245.20
4887D	T-2	193.04	0.00	0.00	0.00	444.35	17.61	0.32	0.30	0.37	21.90	319.47	739.16	1,736.52
4887E	T-3	222.29	0.00	0.00	0.00	361.32	18.00	0.37	0.34	0.39	25.76	370.39	452.59	1,451.45
4887F	T-4	0.30	0.00	181.34	72.20	344.54	15.68	0.30	0.32	0.34	0.00	0.53	0.39	615.94
4887G	T-5	0.30	0.00	183.88	73.30	0.00	0.69	0.32	0.32	0.34	0.00	0.53	0.62	260.30
4887H	T-6	0.30	0.00	0.69	0.55	0.00	1.03	0.32	0.37	0.34	0.00	0.48	376.88	380.96
4887J	T-7	0.00	0.00	0.00	0.00	0.00	1.24	0.48	0.34	0.37	0.00	0.48	0.53	3.44
4887K	T-8	0.34	0.39	0.78	0.53	0.00	0.60	0.37	0.32	0.39	0.00	0.48	0.55	4.75
4886B	T-9	0.37	0.39	2.48	0.00	0.60	1.97	0.30	0.37	0.39	0.00	0.71	0.53	8.11
4886C	T-10	0.37	0.55	1.79	0.00	0.73	1.86	0.55	0.57	0.44	0.00	1.38	0.55	8.79
4886D	T-11	0.00	0.41	1.08	0.00	0.71	0.76	0.37	0.41	0.39	0.00	0.83	0.53	5.49
4886E	T-12	0.41	0.67	1.56	0.00	0.62	1.45	1.01	0.87	0.92	24.86	319.61	788.25	1,140.23
	T Total:	843.00	2.41	559.87	221.33	1,615.63	79.16	5.01	4.87	5.07	95.98	1,350.34	3,078.51	7,861.18
Verdugo (V)														
3863H	V-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3863P	V-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3863J	V-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3863L	V-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3853G	V-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3854F	V-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3844R	V-24	0.00	0.00	0.00	0.00	0.00	34.41	247.31	64.16	0.00	0.44	0.00	0.00	346.32
	V Total:	0.00	0.00	0.00	0.00	0.00	34.41	247.31	64.16	0.00	0.44	0.00	0.00	346.32

2005-2006 Water Year
(acre-feet)

LACDPW Well No.	Owner Well No.	2005 Oct.	Nov.	Dec.	2006 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
San Fernando Basin (cont'd)														
Whitnall (W)														
3820E	W-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821B	W-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821C	W-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821D	W-4	0.18	0.18	0.25	0.00	0.37	0.00	0.28	0.00	0.69	0.00	0.87	0.00	2.82
3821E	W-5	0.34	0.37	0.28	0.00	0.37	0.00	0.18	0.00	0.53	0.00	0.80	0.00	2.87
3831J	W-6A	0.14	0.16	0.18	37.72	0.18	0.00	0.18	92.33	290.06	352.41	267.63	319.61	1,360.60
3832K	W-7	0.07	0.07	0.09	0.00	0.16	0.00	0.09	43.48	135.51	158.13	115.68	135.15	588.43
3832L	W-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3832M	W-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3842E	W-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	W Total:	0.73	0.78	0.80	37.72	1.08	0.00	0.73	135.81	426.79	510.54	384.98	454.76	1,954.72
Los Angeles, City of Total:		3,076.27	692.23	1,050.72	844.02	4,023.57	2,171.81	566.87	798.44	2,935.75	5,188.73	6,784.38	9,908.84	38,041.63
San Fernando Basin Total:		4,697.53	1,826.26	2,956.62	2,648.18	5,415.48	3,524.40	2,033.00	2,689.67	5,037.16	7,363.11	9,067.17	12,116.04	59,374.63

Sylmar Basin														
Los Angeles, City of														
Plant	Mission													0.00
4840J	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4840K	6	161.78	53.97	0.16	37.09	0.00	0.11	0.00	0.57	207.69	170.71	191.80	201.49	1,025.37
4840S	7	191.00	61.66	0.00	39.00	0.00	0.00	0.00	0.90	227.66	189.05	214.26	225.76	1,149.29
		352.78	115.63	0.16	76.09	0.00	0.11	0.00	1.47	435.35	359.76	406.06	427.25	2,174.66
Santiago Estates														
5998	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
San Fernando, City of														
5969D	2A	134.97	3.28	4.17	27.15	118.36	105.82	130.47	209.67	245.25	275.82	240.92	185.96	1,681.84
5959	3	58.36	1.42	1.47	8.79	59.99	58.53	36.69	1.22	0.00	0.00	23.02	94.94	344.43
5969	4	14.63	3.05	0.39	5.32	14.84	16.40	21.00	28.08	31.71	37.53	34.14	17.42	224.51
5968	7A	37.91	0.57	1.15	13.47	56.14	51.92	48.77	65.23	83.23	98.54	86.11	63.14	606.18
	Total:	245.87	8.32	7.18	54.73	249.33	232.67	236.93	304.20	360.19	411.89	384.19	361.46	2,856.96
Sylmar Basin Total:		598.65	123.95	7.34	130.82	249.33	232.78	236.93	305.67	795.54	771.65	790.25	788.71	5,031.62

2005-2006 Water Year
(acre-feet)

LACDPW Well No.	Owner Well No.	2005 Oct.	Nov.	Dec.	2006 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
							Verdugo Basin							
Crescenta Valley County Water District														
5058B	1	42.35	32.91	43.26	20.61	32.41	4.17	11.50	19.01	54.61	55.66	52.41	40.59	409.49
5036A	2	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.26
5058H	5	58.53	61.24	49.89	62.29	49.62	56.52	48.60	59.59	30.56	49.38	8.21	0.55	534.98
5058	6	10.09	9.92	10.31	11.38	9.60	11.93	10.78	9.52	10.75	10.72	6.12	6.52	117.64
5047B	7	16.33	14.44	18.36	4.52	8.56	1.20	0.92	32.22	3.00	3.05	10.46	0.14	113.20
5069J	8	39.70	37.63	38.49	37.67	32.90	37.23	33.42	31.57	36.00	36.72	18.24	9.84	389.41
5047D	9	33.26	35.70	33.57	27.09	34.07	2.97	9.80	36.95	41.60	41.23	36.09	37.72	370.05
5058D	10	40.54	15.38	9.08	9.78	19.33	26.16	23.34	28.88	36.89	41.85	7.87	1.93	261.03
5058E	11	30.91	29.65	30.55	31.99	30.29	32.88	29.40	36.74	34.07	33.40	2.90	0.80	323.58
5058J	12	1.52	43.75	45.09	42.26	36.37	44.22	42.57	35.19	42.34	46.62	30.84	25.15	435.92
5069F	14	40.38	38.56	40.12	39.62	36.02	39.81	37.70	2.28	0.00	0.00	0.58	26.44	301.51
	15	7.08	5.39	5.75	4.37	0.00	0.00	0.00	0.00	0.00	0.40	3.65	0.43	27.07
	PICKENS (CVWD)	5.00	4.81	5.00	5.00	4.53	4.93	4.81	4.77	4.83	5.03	5.03	4.83	58.57
	Total:	325.69	329.38	329.47	296.81	293.70	262.02	252.84	296.72	294.65	324.07	182.40	154.96	3,342.71
Knowltons														
	PICKENS	0.96	0.93	0.96	0.96	0.87	0.96	0.93	0.93	0.96	0.96	0.96	0.93	11.31
Glendale, City of														
3961-3971	GL3-4	120.86	117.13	117.98	117.35	111.61	120.94	114.48	123.94	110.23	119.77	119.12	114.89	1,408.30
3970	GL-6	0.00	0.00	0.00	0.00	79.90	104.98	94.43	98.70	90.08	93.29	87.20	82.69	731.27
—	VPCKP	39.34	0.00	19.76	1.27	49.82	64.82	59.64	15.57	0.00	0.00	0.00	0.00	250.22
—	MM-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	160.20	117.13	137.74	118.62	241.33	290.74	268.55	238.21	200.31	213.06	206.32	197.58	2,389.79
Verdugo Basin Total:		486.85	447.44	468.17	416.39	535.90	553.72	522.32	535.86	495.92	538.09	389.68	353.47	5,743.81
							Eagle Rock Basin							
Sparkletts														
3987A	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3987B	2	1.93	4.37	6.13	4.64	5.38	5.72	2.66	3.87	6.46	3.45	7.62	5.72	57.95
3987F	3	7.29	0.49	0.69	1.14	0.62	0.23	0.73	0.31	0.71	0.13	0.38	0.45	13.17
3987G	4	7.26	8.60	11.01	7.88	8.74	9.33	11.57	5.50	11.35	7.09	13.44	16.98	118.75
	Total:	16.48	13.46	17.83	13.66	14.74	15.28	14.96	9.68	18.52	10.67	21.44	23.15	189.87
Eagle Rock Basin Total:		16.48	13.46	17.83	13.66	14.74	15.28	14.96	9.68	18.52	10.67	21.44	23.15	189.87
ULARA Total:		5,799.51	2,411.12	3,449.96	3,209.05	6,215.45	4,326.18	2,807.21	3,540.88	6,347.14	8,683.52	10,268.54	13,281.37	70,339.94

APPENDIX B
KEY GAGING STATIONS OF SURFACE RUNOFF

Los Angeles County Dept of Public Works USDAY V43 Output 12/13/2006

Summary Report

Site: F252 Verdugo Wash At Estelle Avenue
USGS #:
Beginning Date: 10/01/2005
Ending Date: 09/30/2006

Daily Mean Discharge in Cubic feet/second Water Year Oct 2005 to Sep 2006

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	13	15	55	12	14	70	10	12	14	15	12
2	11	13	16	547	11	12	11	10	12	13	16	12
3	12	13	16	29	11	88	14	10	12	13	15	12
4	11	13	14	19	9.4	16	236	10	12	13	15	11
5	11	13	14	14	9.4	13	91	11	12	14	14	11
6	12	13	14	15	11	37	18	11	12	14	13	11
7	11	13	14	17	10	17	16	11	12	14	13	11
8	12	14	15	13	9.5	11	15	11	12	13	12	11
9	12	19	18	14	9.7	11	14	12	13	14	11	10
10	12	15	16	13	8.9	35	13	12	12	13	10	9.9
11	12	13	16	13	8.9	34	12	13	12	13	10	9.9
12	12	15	17	13	8.9	19	12	13	13	13	9.7	11
13	12	15	18	12	8.9	13	11	13	12	14	11	10
14	12	15	18	27	9.3	11	49	12	12	15	10	9.9
15	28	15	18	12	8.7	11	17	12	13	15	10	9.9
16	15	15	19	11	8.2	11	11	12	13	14	12	9.9
17	234	16	19	11	22	11	9.9	12	13	14	12	9.1
18	37	16	20	11	16	15	10	12	13	15	12	8.9
19	12	16	21	11	26	11	10	12	13	15	12	8.9
20	12	16	21	11	11	70	8.8	13	13	14	12	8.9
21	12	17	24	9.9	8.9	34	8.1	14	13	14	12	8.9
22	12	16	22	11	9.0	11	9.4	97	13	14	12	8.9
23	12	17	21	11	8.8	11	9.1	11	13	13	12	8.9
24	13	16	22	11	8.9	10	9.3	10	13	13	12	8.9
25	16	17	23	10	11	11	9.9	11	14	13	12	8.9
26	13	15	29	9.9	10	9.2	11	11	15	14	12	9.6
27	14	12	25	10	211	9.8	9.3	11	14	14	12	9.9
28	13	13	29	10	217	256	10	11	13	17	12	9.7
29	13	12	28	10	------	54	10	10	13	14	12	9.9
30	13	13	26	11	------	14	10	12	14	14	12	9.9
31	12	------	179	12	------	12	------	13	------	15	12	------
Total	644	439	767	983.8	714.4	892.0	744.8	443	383	432	376.7	300.8
Mean	20.8	14.6	24.7	31.7	25.5	28.8	24.8	14.3	12.8	13.9	12.2	10.0
Max	234	19	179	547	217	256	236	97	15	17	16	12
Min	11	12	14	9.9	8.2	9.2	8.1	10	12	13	9.7	8.9
Acre-Ft	1280	871	1520	1950	1420	1770	1480	879	760	857	747	597

Wtr Year 2006	Total	7120.5	Mean	19.5	Max	547	Min	8.1	Acre-Ft	14120
Cal Year 2005	Total	16719	Mean	45.8	Max	1350	Min	10	Acre-Ft	33160

Los Angeles County Dept of Public Works USDAY V43 Output 12/13/2006

Summary Report

Site: F57C Los Angeles River Above Arroyo Seco
USGS #:
Beginning Date: 10/01/2005
Ending Date: 09/30/2006

Daily Mean Discharge in Cubic feet/second Water Year Oct 2005 to Sep 2006

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	83	100	1000	168	178	1050	160	107	119	111	106
2	88	85	96	5820	168	150	142	151	110	116	109	110
3	85	94	121	490	173	1410	179	161	121	116	107	103
4	84	107	94	138	173	146	3560	154	125	118	105	105
5	81	121	90	121	183	121	1940	164	98	121	108	106
6	84	125	83	120	194	275	537	165	104	128	108	106
7	79	137	87	115	200	284	287	166	107	114	109	108
8	77	147	90	111	208	122	173	165	107	122	106	109
9	81	480	95	113	209	120	129	167	106	126	103	113
10	80	268	90	112	221	139	134	162	108	124	106	109
11	80	107	89	114	230	497	121	173	110	128	106	109
12	77	98	92	117	238	142	111	170	117	128	113	106
13	76	94	95	119	248	131	108	173	119	127	107	102
14	74	93	99	358	254	123	485	187	127	124	105	106
15	77	92	102	119	266	127	171	183	135	120	105	109
16	76	89	105	116	266	123	112	198	138	137	101	102
17	2380	93	104	117	519	173	111	190	144	130	103	103
18	734	94	103	122	382	209	109	193	145	125	102	104
19	71	95	108	135	725	148	106	185	136	128	105	106
20	66	96	108	130	174	419	112	186	130	118	106	103
21	66	98	108	131	171	569	121	197	123	121	105	106
22	66	101	109	130	167	132	131	1690	111	119	104	108
23	66	102	109	131	161	132	133	117	105	116	98	113
24	66	103	109	132	173	121	134	102	108	119	106	115
25	84	99	104	136	182	134	140	102	103	116	99	107
26	70	99	188	141	186	136	144	102	103	125	100	107
27	68	98	109	145	2960	142	139	104	103	123	100	106
28	72	98	109	142	3090	3640	145	99	99	123	99	107
29	73	98	109	144	------	983	150	101	125	120	100	104
30	74	100	107	153	------	157	154	103	129	117	102	104
31	76	------	1200	158	------	134	------	105	------	112	104	------
Total	5318	3594	4312	11130	12289	11317	11068	6275	3503	3780	3242	3202
Mean	172	120	139	359	439	365	369	202	117	122	105	107
Max	2380	480	1200	5820	3090	3640	3560	1690	145	137	113	115
Min	66	83	83	111	161	120	106	99	98	112	98	102
Acre-Ft	10550	7130	8550	22080	24370	22450	21950	12450	6950	7500	6430	6350

Wtr Year 2006	Total	79030	Mean	217	Max	5820	Min	66	Acre-Ft 156800
Cal Year 2005	Total	220416	Mean	604	Max	17500	Min	66	Acre-Ft 437200

Los Angeles County Dept of Public Works

USDAY V43 Output 12/14/2006

Summary Report

Site: F118B Pacoima Creek Flume below Pacoima Dam
USGS #:
Beginning Date: 10/01/2005
Ending Date: 09/30/2006

Daily Mean Discharge in Cubic feet/second Water Year Oct 2005 to Sep 2006

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0	1.8	0	70	.04	0	0	0	19	0
2	0	0	0	.03	0	104	0	114	0	0	28	0
3	0	0	0	0	0	34	0	161	0	0	8.5	0
4	0	0	0	0	0	0	.07	47	0	0	0	0
5	0	0	0	0	0	0	29	0	18	0	0	0
6	0	0	0	0	0	.45	96	0	27	0	0	0
7	0	0	0	0	0	.13	103	0	27	0	0	0
8	0	0	0	0	0	0	103	111	15	0	0	0
9	0	16	0	0	0	0	103	157	0	0	0	0
10	0	29	0	212	0	.08	103	153	0	0	0	0
11	0	0	0	101	0	.28	103	46	0	0	0	0
12	0	0	0	0	0	0	102	0	18	0	0	0
13	0	0	0	0	0	0	102	0	26	0	0	0
14	0	14	0	0	0	155	30	0	27	0	0	0
15	0	22	0	0	0	201	0	89	15	0	0	0
16	0	22	0	0	0	73	0	124	0	0	0	0
17	3.3	7.3	0	0	0	0	111	51	0	0	0	0
18	4.5	0	0	0	.24	0	142	0	0	0	0	0
19	2.3	0	15	0	.37	0	140	0	0	0	0	0
20	1.2	0	25	0	0	.05	45	0	0	0	0	0
21	.64	0	24	0	0	0	0	0	0		0	0
22	.60	0	9.3	0	0	55	0		0	0	7.2	0
23	.13	0	0	0	0	0	0	0	0	0	0	0
24	.22	0	0	0	0	0	109	.18	0	22	0	0
25	2.9	0	0	0	0	0	149	0	0	11	.22	0
26	1.3	0	0	0	0	0	45	0	0	0	0	0
27	1.2	0	0	0	1.0	0	0	0	0	0	0	0
28	1.1	0	0	0	.77	.07	0	0	0	0	0	0
29	.60	0	0	0	------	.04	0	0	0	0	0	0
30	.43	1.5	0	0	------	0	0	0	0	0	0	0
31	0	------	.27	0	------	0	------	0	------	0	0	------
Total	20.42	111.8	73.57	314.83	2.38	693.10	1615.11	1053.18	173	33	62.92	0
Mean	.76	3.73	2.37	10.2	.085	22.4	53.8	35.1	5.77	1.10	2.03	0
Max	4.5	29	25	212	1.0	201	149	161	27	22	28	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Acre-Ft	41	222	146	624	4.7	1370	3200	2090	343	65	125	0

Wtr Year 2006	Total	4153.31	Mean	11.6	Max	212	Min	0	Acre-Ft 8240
Cal Year 2005	Total	205.79	Mean	2.34	Max	29	Min	0	Acre-Ft 408

Los Angeles County Dept of Public Works USDAY V43 Output 12/13/2006

Summary Report

Site: F300 Los Angeles River at Tujunga Avenue
USGS #:
Beginning Date: 10/01/2005
Ending Date: 09/30/2006

Daily Mean Discharge in Cubic feet/second Water Year Oct 2005 to Sep 2006

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	74	95	314	121	452	1080	70	70	71	67	63
2	66	77	95	3540	119	162	186	70	69	70	67	63
3	67	76	104	452	116	1220	129	70	69	70	67	63
4	68	82	99	162	116	157	2710	69	69	70	66	63
5	59	88	89	131	117	114	1690	69	68	70	66	63
6	61	92	83	125	120	298	748	69	68	70	65	62
7	64	94	87	119	119	345	518	69	69	69	65	62
8	65	97	92	115	118	129	269	69	69	70	65	62
9	67	236	95	114	116	109	139	69	68	70	65	63
10	69	394	90	117	116	105	134	68	68	70	65	62
11	70	113	88	116	116	581	127	68	68	69	65	62
12	70	88	90	120	116	141	113	68	68	69	65	62
13	71	86	90	117	117	112	101	68	68	69	64	61
14	72	87	91	461	105	107	427	78	68	69	63	61
15	72	92	91	133	106	106	209	74	67	68	63	62
16	71	91	91	113	110	104	112	68	67	69	63	61
17	1480	92	91	115	115	103	99	68	67	69	63	60
18	820	88	90	111	145	111	92	69	67	70	63	60
19	88	87	88	123	188	111	84	69	67	69	63	60
20	83	87	88	123	136	339	80	68	67	68	63	60
21	77	87	90	126	123	529	80	69	67	67	63	60
22	74	90	92	123	120	119	80	1130	67	67	63	60
23	72	93	90	120	118	104	80	104	68	67	63	61
24	70	92	89	121	117	79	80	62	68	68	64	61
25	88	90	86	123	115	79	77	55	68	68	63	62
26	76	86	97	126	117	84	75	51	69	68	63	62
27	76	85	94	128	2210	89	74	49	70	68	63	62
28	77	85	89	123	2560	2690	73	47	71	68	63	62
29	76	90	88	122	------	936	73	45	71	67	63	61
30	75	94	85	124	------	192	73	63	71	67	63	61
31	73	------	234	126	------	120	------	70	------	67	63	------
Total	4382	3113	2961	8083	7912	9927	9812	3135	2051	2131	1987	1847
Mean	141	104	95.5	261	283	320	327	101	68.4	68.7	64.1	61.6
Max	1480	394	234	3540	2560	2690	2710	1130	71	71	67	63
Min	59	74	83	111	105	79	73	45	67	67	63	60
Acre-Ft	8690	6170	5870	16030	15690	19690	19460	6220	4070	4230	3940	3660

Wtr Year 2006	Total	57341	Mean	157	Max	3540	Min	45	Acre-Ft 113700
Cal Year 2005	Total	186223	Mean	510	Max	15800	Min	38	Acre-Ft 369400

Los Angeles County Dept of Public Works

USDAY V43 Output 12/13/2006

Summary Report

Site: F168 Big Tujunga Creek Below Big Tujunga Dam
USGS #:
Beginning Date: 10/01/2005
Ending Date: 09/30/2006

Daily Mean Discharge in Cubic feet/second Water Year Oct 2005 to Sep 2006

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	5.7	10	7.8	11	224	75	24	16	.40	3.8	.52
2	1.0	5.7	11	24	4.9	127	44	24	16	.29	3.8	.35
3	41	5.8	11	59	.93	47	43	24	14	.25	3.7	.32
4	50	6.0	11	85	.89	24	46	24	13	.22	3.8	.28
5	16	6.0	8.5	100	.88	24	312	24	10	.20	2.1	.27
6	1.4	6.0	6.5	48	.82	53	203	24	9.1	.18	.34	.26
7	1.4	19	7.4	26	.85	74	167	24	9.1	.16	.22	.25
8	1.1	24	7.1	26	.89	73	157	24	9.2	.14	.18	.25
9	1.2	25	7.1	42	1.9	32	119	24	9.2	.12	.15	.24
10	1.2	15	7.1	60	4.0	20	81	24	9.1	1.7	.13	.22
11	1.3	.17	6.9	37	4.0	23	65	24	9.1	3.8	.16	.19
12	1.3	.19	6.8	25	4.2	24	64	24	9.1	3.9	.23	.17
13	1.8	.34	6.9	25	7.6	24	64	24	9.1	3.9	.24	.17
14	2.2	.54	6.9	25	9.9	24	63	24	9.1	3.9	.25	.21
15	2.5	.01	6.9	25	11	23	64	24	9.1	4.0	.27	.23
16	2.5	.01	7.1	25	13	24	64	24	9.1	4.0	.27	.21
17	2.0	.29	7.1	14	12	24	65	24	9.1	3.9	.27	.19
18	1.5	16	7.1	10	17	24	65	20	9.1	4.0	.28	.18
19	1.4	25	7.1	10	18	24	62	16	9.2	4.0	.29	.18
20	1.4	25	7.1	10	13	24	64	16	9.3	4.0	.30	.19
21	1.4	25	7.2	10	11	24	64	16	9.3	3.9	2.1	.21
22	1.4	25	7.4	10	10	39	64	16	7.8	3.7	3.8	.23
23	1.4	17	7.5	10	10	49	64	16	5.0	3.8	3.9	.22
24	1.4	11	7.7	10	33	49	50	16	4.9	3.8	3.9	.20
25	1.3	11	7.7	10	46	50	28	16	4.9	3.7	3.9	2.0
26	1.1	11	7.7	10	46	52	24	16	4.9	3.8	4.0	4.0
27	1.2	11	7.7	10	28	32	24	16	5.0	3.8	3.9	4.3
28	1.1	11	7.6	10	207	24	24	16	5.0	3.8	3.8	4.0
29	1.2	11	7.4	10	------	81	24	16	4.1	3.8	3.7	3.8
30	1.1	10	7.4	10	------	126	24	16	.91	3.8	3.7	3.9
31	1.2	------	7.8	10	------	124	------	16	------	3.8	2.2	------
Total	147.0	328.75	239.7	793.8	527.76	1586	2277	636	257.81	84.76	59.68	27.74
Mean	4.74	11.0	7.73	25.6	18.8	51.2	75.9	20.5	8.59	2.73	1.93	.92
Max	50	25	11	100	207	224	312	24	16	4.0	4.0	4.3
Min	1.0	.01	6.5	7.8	.82	20	24	16	.91	.12	.13	.17
Acre-Ft	292	652	475	1570	1050	3150	4520	1260	511	168	118	55

Wtr Year 2006	Total	6966.00	Mean	19.1	Max	312	Min	.01	Acre-Ft 13820
Cal Year 2005	Total	60650.26	Mean	166	Max	3720	Min	.01	Acre-Ft 120300

Los Angeles County Dept of Public Works

USDAY V43 Output 12/13/2006

Summary Report

Site: E285 Burbank-Western Storm Drain
USGS #:
Beginning Date: 10/01/2005
Ending Date: 09/30/2006

Daily Mean Discharge in Cubic feet/second Water Year Oct 2005 to Sep 2006

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	12	20	54	17	18	39	20	19	15	14	7.8
2	14	13	22	478	22	17	16	21	18	15	14	7.8
3	14	13	21	17	27	127	20	21	18	15	15	7.4
4	13	13	20	13	26	15	285	22	18	15	14	7.2
5	13	13	16	13	18	15	62	20	18	16	13	7.4
6	13	14	18	13	16	21	18	20	20	14	12	8.1
7	13	15	19	12	18	14	16	20	19	14	13	7.5
8	14	15	19	13	16	15	16	21	17	14	12	12
9	14	25	19	12	17	15	17	21	17	14	12	12
10	13	15	17	13	17	23	19	22	17	14	11	8.2
11	14	13	16	13	18	33	20	22	17	14	10	9.5
12	14	16	16	14	17	16	18	22	17	13	9.7	11
13	13	18	16	14	17	15	19	22	14	14	11	10
14	14	18	16	36	19	13	45	22	15	14	11	9.0
15	14	18	16	13	20	15	19	23	17	13	9.3	14
16	14	17	17	14	20	15	18	23	16	13	8.6	11
17	237	15	16	14	38	16	19	21	16	12	11	15
18	47	19	16	15	21	28	17	20	17	12	8.8	10
19	12	18	16	15	30	16	18	20	16	13	8.2	10
20	11	22	16	15	16	66	17	19	16	13	13	9.9
21	11	21	17	15	17	21	18	28	16	14	14	9.9
22	12	21	19	16	19	17	18	89	16	13	12	11
23	12	22	19	11	20	15	19	18	16	14	11	11
24	13	22	19	9.5	21	15	20	17	15	13	8.6	9.4
25	12	23	19	11	21	16	20	17	14	15	9.0	11
26	12	22	19	12	21	16	20	17	14	16	12	12
27	11	21	21	11	317	16	20	17	14	13	7.4	12
28	11	18	20	11	194	271	20	17	14	13	10	11
29	11	17	19	11	------	101	20	17	13	13	8.5	9.9
30	11	19	19	10	------	17	19	19	14	13	11	8.2
31	11	------	90	12	------	16	------	18	------	13	9.5	------
Total	651	528	633	930.5	1040	1034	912	696	488	427	343.6	300.2
Mean	21.0	17.6	20.4	30.0	37.1	33.4	30.4	22.5	16.3	13.8	11.1	10.0
Max	237	25	90	478	317	271	285	89	20	16	15	15
Min	11	12	16	9.5	16	13	16	17	13	12	7.4	7.2
Acre-Ft	1290	1050	1260	1850	2060	2050	1810	1380	968	847	682	595

Wtr Year 2006	Total	7983.3	Mean	21.9	Max	478	Min	7.2	Acre-Ft 15830
Cal Year 2005	Total	14335	Mean	39.3	Max	725	Min	11	Acre-Ft 28430

APPENDIX C
COMPONENTS OF LOS ANGELES RIVER FLOW

UPPER LOS ANGELES RIVER AREA: COMPONENTS OF LOS ANGELES RIVER FLOW							
2005-06 WATER YEAR							
TOTAL FLOW AT GAGE F-57C-R			F-57C-R: Storm, Reclaimed, Industrial, Rising Groun				
			F300-R: Storm, Tillman, Industrial Waste, and Rising				
Total:	156,800		E285-R :Storm, Burbank WRP, Industrial Waste				
			F252-R: Storm, Rising Water				
I. RECLAIMED WATER DISCHARGED TO L.A. RIVER IN ULARA							
Tillman:	41265	: Record					
L.A.-Glendale:	12726	: Record					
Burbank WRP:	7178	: Record					
Total:	**61169**						
II. INDUSTRIAL WATER and STORM FLOWS DISCHARGED TO L.A. RIVER IN ULARA							
Upstream of F300-R							
Industrial Water	505	: From F300-R separation of flow					
F168	13820						
F118	8240						
Storm Flows @300	36402	Storm flows less F168 and F118					
	58967						
Between F300-R and E-285							
Burbank OU	27	Burbank Operable Unit					
MTA	47						
Storm Drains and Unaccounted water	4620	:6.4 cfs assumes 4,620					
Headworks:	0	:pilot project record					
Western Drain:	3700	: From E285-R separation of flow					
Storm Flows @285	4925						
	13319						
Between E-285 and F57C-R							
Storm Flows, DryWeather Flow, perennial stream flow, VPWTP @ 252	12717	:From F252-R separation of flow					
Glendale Operable Unit	828						
Eagle Rock Blow Off	0						
Pollock Treatment	0						
Sycamore Canyon	1100	Estimated from historic flows					
Storm Drains and Unaccounted water	3258	:4.5 cfs assumes 3,258 from F57C -R separation of flows					
	17903						
Total Part II	**90190**						
III. RISING WATER IN L.A. RIVER IN ULARA							
Total:	5441	: See Section 2.3 of the Watermaster's Report					

APPENDIX D
WATER QUALITY DATA

REPRESENTATIVE MINERAL ANALYSES OF WATER

Well Number or Source	Date Sampled	Spec. Cond. µmho/c	Mineral Constituents in milligrams per liter (mg/l)												TDS mg/l	Hardness as $CaCO_3$ mg/l
			pH	Ca	Mg	Na	K	CO_3	HCO_3	SO_4	Cl	NO_3	F	B		
Imported Water																
Colorado River Water at Eagle Rock Reservoir	2006FY	667	8.2	36	17	70	3.2	0	92	136	68	2	0.15	0.15	389	158
LA Aqueduct No 1. Influent	8/21/2006	237	8.0	19	3.2	22.6	2.8	0	76	14	18.1	ND	41	0.34	137	71.2
LA Aqueduct Filtration Plant Influent	8/1/2006	262	8.1	19.5	4.1	24.4	2.7	---	76	19.7	21.6	ND	0.38	0.34	150	70
State Water Project at Joseph Jensen Filtration Plant (Influent)	2006FY	177	7.8	31	14	40	2.8	0	104	67	47	2.2	0.22	0.21	271	135
Surface Water																
Tillman Rec. Plant Discharge to LA River	2006FY	-	7.4	-	-	-	-	-	-	122	105	0.85	0.78	0.67	558	201
Los Angeles River at Arroyo Seco	9/95	981	8.0	68.1	24.3	96.5	9.75	ND	171	191	108	7.4	0.3	0.58	666	270
LA/Glendale Rec. Plant Discharge to LA River	2006FY	-	7.3	-	-	-	-	-	-	151	140	0.85	0.35	0.43	648	241
Ground Water																
(San Fernando Basin - Western Portion)																
4757C (Reseda No. 6)	10/13/83	944	7.8	115	31	43	2.1	-	301	200	33	2.6	0.31	0.24	595	416
(San Fernando Basin - Eastern Portion)																
3800 (No. Hollywood No. 33)	5/19/2004	1150	7.8	80.5	27.4	132	3.9	-	109	320	67.2	3.06	0.45	0.56	729	321
3851C V0-8/Burbank No. 10	4/8/2004	-	7.5	-	-	-	-	ND	286	-	36.5	32.7	-	-	442	314
Glendale OU GN-1	4/6/2004	977	7.2	120	31	44	5.1	0.33	318	140	58	8.7	0.32	0.16	620	261
(San Fernando Basin - L.A. Narrows)																
3959E (Pollock No. 6)	5/19/2004	933	7.2	92	30.4	52.9	2.55	0	262	129	76.8	42.4	0.28	0.24	591	347
(Sylmar Basin)																
4840K (Mission No. 6)	6/8/2005	460	7.7	53.1	10.1	28.4	3.83	0	199	53	14	5.3	0.34	0.09	347	170
5969 (San Fernando No. 4A)	2/23/2006	454	7.8	50	9.2	28	4.3	ND	170	52	14	18	0.08	-	278	160
(Verdugo Basin)																
3971 (Glorietta No. 3)	2/14/2006	-	6.8	145	42.7	27.3	4.47	<10.0	207	191	133	43.8	0.18	-	698	485
5069F (CVWD No. 14)	2/7/2006	710	7.3	93	26	35	3.4	ND	200	110	64	42	0.32	ND	510	330

APPENDIX E
DEWATERING AND REMEDIATION PROJECTS

DEWATERING PROJECTS

No.	Company	Contact	Address	ID	Start Date
1	Danalax Engineering Corp.	Krell, Alex	11239 Ventura Blvd.	P	
2		Henkin, Doug	8806 Etiwanda Ave.	P	
3	Delta Tech. Engineering	Abbasi, Z. A.	12800 Ventura Blvd.	P	
4	Commercial Project	Helfman, Haloosim & Assoc.: Varadi, Ivan	5550 Topanga Canyon	D	Jun 19, 1989
5	Encino Spectrum Project	Helfman, Haloosim & Assoc.: Varadi, Ivan	15503 Ventura Blvd.	D	Jun 14, 1989
6	Home Savings of America	Eli Silon & Associates	13949 Ventura Blvd.	D	Jun 14, 1989
7	Warner Center Ent. Complex	Tsuchiyama and Kaino	5955 Owensmouth Ave.	D	Jun 26, 1989
8	T Violes Construction Company	Viole, Tim, Jr.	15840 Ventura Blvd.	P	
9		Eccleston, C. W.	22020 Clarendon St.	P	
10		Marks, Ronald	5348 Topanga Canyon	P	
11	Helfman, Haloosim & Assoc.	Varadi, Ivan	21820 Burbank Blvd.	P	
12	Park Hill Medical Plaza	Anjomshoaa, Mahmoud	7303 Medical Center Dr.	D	Dec 27, 1989
13	Danalex Engineering		12050 Ventura Blvd.	P	
14	Ellis Plumbing Co.	Ellis, Chris	4235 Mary Ellen Ave.	P	
15	Tarzana Office Plaza	Varadi Engineering	18701 Burbank Ave.	P	
16	Helfman, Haloosim & Associates	Varadi, Ivan	5350 White Oak Ave.	P	
17	First Financial Plaza Site	Slade, Richard	16830 Ventura Blvd.	D	Oct 9, 1987
18	Trillium	Arnold, Daryl	6310 Canoga Ave.	D	Apr 27, 1988
19	LAMCO	O'Neil, John	21300 Victory Blvd	D	Apr 27, 1988
20	La Reina Fashion Plaza	Blumenfeld, Dolores	14622 Ventura Blvd.	D	Apr 27, 1988
21	Auto Stiegler	Stiegler, John	16721 Ventura Blvd.	D	Oct 31, 1987
22	Sherway Properties	Vasquez, Rodney	4477 Woodman Ave.	P	
23	Ellis Plumbing Co.	Ellis, Chris	19951 Roscoe Blvd.	P	
24	Metropolitan Transportation Authority	Laury, Victor	Metro Red Line	D	April 1, 1995
25		Carter, Dennis	4547 Murietta Ave	P	Jan 16, 1997
26	MWD Sepulveda Feeder Pipeline Const	David Dean	Jensen Plant	TD	August 1, 1998
27	A H Warner Properties Plaza 3	Bernier, Dave	21650 Oxnard	D	June 4, 1997
28	A H Warner Properties Plaza 6	Bernier, Dave	21700 Oxnard	D	June 4, 1997
29	Brent & Miller	Brent, Stanley	4328 Mammoth Ave	D	January 13, 2000
30	Northeast Interceptor Sewer	Nick Demos	Bureau of Engineering	TD	October 1, 2001
31	MTA Underground Pedestrian Crossing	Tim Lindholm	MTA	TD	November 1, 2001
32	Eagle Rock Interceptor Sewer	Baron Miya	Bureau of Engineering	TD	May 8, 2003
33	Avalon Bay	Rob Salkovitz	16350 Ventura Blvd	TD	January 26, 2006

Notes:

1) ID - Refers to the type of project;

D: Permanent dewatering required.

P: No dewatering required presently, however there is potential for dewatering in the future.

TD: Temporary Dewatering

2) Start Date - Date project was brought to the attention of the ULARA Watermaster.

REMEDIATION PROJECTS

No.	Company	Contact	Address	ID	Start Date
1	Mobil Oil	Alton Geoscience	16461 Ventura Blvd.	R	May 11, 1989
2	Thrifty Oil	Delta Tech. Eng.	18226 Ventura Blvd.	R	Feb 2, 1990
3	Boeing (Rockwell International)	Lafflam, S. R.	6633 Canoga Park Ave.	R	Jun 10, 1990
4	Lockheed	Gene Matsushita	N. Hollywood Way	R	Jan 5, 1989
5	3M Pharmaceutical	Bob Paschke	19901 Nordhoff St.	R	Feb 8, 1989
6	Philips Components	Wade Smith	4561 Colorado St.	R	Jul 14, 1987
7	Raytheon (Hughes)	Tim Garvey	Canoga Park, CA	R	February 1995
8	Holchem	Cuthbert, Andrew	Pacoima, CA	R	February 1, 2000
9	Micro Matic USA Inc.	Reinhard Ruhmke	Northridge CA	R	April, 1999
10	Menasco	George Piantka	Burbank, CA	R	October 31, 2001
11	Home Depot	Karen Arteaga	Burbank, CA	R	March 19, 2001
12	Drilube	Artik Avanessians	Glendale, CA	R	March 29, 2002
13	PRC-Desoto (Courtald)	Christer Sorenson	Glendale, CA	R	August 22, 2002
14	Honeywell (Allied Signal)	Benny Dehghi	No.Hollywood, CA	R	February 21, 2003
15	Excello Plating	Glen Harleman	Los Angeles, CA	R	June 20, 2003
16	Tesoro	Peter Stampf	No. Hollywood,CA	R	May 8, 2004
17	ITT	Teresa Olmstead	Burbank, CA	R	June 9, 2004

Notes:

1) ID - Refers to the type of project;
R: Ground water remediation site.

2) Start Date - Date project was brought to the attention of the ULARA Watermaster.

APPENDIX F
COURT APPROVAL for SYLMAR STIPULATION, 2006

ORIGINAL

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Attorneys for Defendant,
CITY OF SAN FERNANDO

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES–CENTRAL DISTRICT

CITY OF LOS ANGELES,

Plaintiff,

vs.

CITY OF SAN FERNANDO, ET AL.,

Defendant.

Case No. 650079

~~[PROPOSED]~~ **ORDER GRANTING MOTION TO APPROVE STIPULATION BETWEEN THE CITIES OF SAN FERNANDO AND LOS ANGELES REGARDING THE SAFE YIELD OF THE SYLMAR BASIN**

Date: November 15, 2006
Time: 8:30 a.m.
Dept.: 52

Hon. Susan Bryant-Deason

[Exempt from Filing Fees Pursuant to Govt. Code §6103]

The motion of the City of San Fernando ("San Fernando") and the City of Los Angeles ("Los Angeles") to approve the stipulation dated October 10, 2006 entered between San Fernando and Los Angeles regarding the safe yield of the Sylmar Basin, came on regularly for hearing on ~~November 15,~~ December 13, 2006 in Department 52 of the above-entitled court, the Hon. Susan Bryant-Deason presiding. The appearances of counsel are noted on the record.

Having considered the papers submitted by the parties, and the arguments of counsel thereon, the Court hereby approves he stipulation dated October 10, 2006 entered between San Fernando and Los Angeles regarding the safe yield of the Sylmar Basin is approved.

DATED: ~~October~~ Dec 13, 2006

Judge Bryant Deacon
Judge of the Superior Court

APPENDIX G
WELLS DRILLED OR ABANDONED

WELLS DRILLED OR DESTROYED

2005-06 WATER YEAR

Forest Lawn

Forest Lawn, a party to the Judgment, destroyed Well No. 2 (3947A) and replaced it with newly drilled Well No. 8 (3947M).

DS Waters

DS Waters, a successor to Deep Rock under the Judgment, destroyed Well Nos. 1, 2, 3, and 4 in February 2007.

No municipal wells were drilled or destroyed.

APPENDIX H
ACTION ITEMS 2007-2008

ACTION ITEMS

WATERMASTER ACTIVITIES FOR 2006-07 WATER YEAR

- Support the parties in their efforts to deal with increasingly stringent stormwater discharge requirements.
- Continue to keep the parties informed regarding current and emerging water quality issues, such as chromium, perchlorate, 1,4-Dioxane, and 1,2,3 TCP.
- Continue to attend meetings of public interest groups, such as the Los Angeles and San Gabriel Rivers Watershed Council, the Sun Valley Watershed Committee, and others to support and promote the goals of the parties and the overall health of the basins within ULARA.
- Continue to attend meetings of technical groups, such as the Association of Groundwater Agencies (AGWA), Groundwater Resources Association (GRA), and others to exchange ideas and information regarding water quality and basin management.
- Explore ways to maximize the spreading of native water and increase the infiltration of urban runoff in the SFB.
- Continue to support the ongoing Verdugo Basin Groundwater Evaluation, and investigate ways to maximize conjunctive use in the Verdugo Basin.
- Continue exploring ways to maximize spreading at the spreading grounds.
- Continue to investigate the unauthorized use of groundwater in unincorporated areas of ULARA and develop processes to expedite water license agreements and access to well drilling permits for property owners.
- Continue to work with the U.S. Forest Service, U.S. Fish and Wildlife Service, LACDPW, and LADWP to support the seismic retrofit of Big Tujunga Dam, with the goal of providing maximum water conservation, protection against flood damage, preservation of habitat for endangered species, and protection of Los Angeles' Pueblo water right.
- Continue to support the City of Burbank in its effort to purchase imported supplies from MWD for spreading and recharging in the SFB.
- Participate in the IRWMP process to increase the amount of grant support for water projects in the Greater Los Angeles Region and promote projects that increase basin recharge.
- Continue to work with the Cities and regulatory agencies, such as the USEPA and RWQCB, to enforce chromium cleanup in the SFB.

APPENDIX I
WATER EQUIVALENTS

Water Equivalents

Volume

1 gallon*.....= 3.7854 liters (L) =231** cubic inches (in^3)
.....= 0.003785 cubic meters (m^3) = 0.132475 cubic feet (ft^3)

100 cubic feet (HCF)****.....= 748 gallons (gal) = 2.83317 cubic meters (m^3)
.....= 2,832 liters (L) = 3.70386 cubic yards (yd^3)
.....= 6,230.8 pounds of water (lb) = 2,826.24 kilograms (kg)

1 acre-foot (AF)***.....= 43,560** cubic feet (ft^3) = 1233.5 cubic meters (m^3)
.....= 325,851 gallons (gal) = 1,233,476.3754 liters (L)
.....= the average amount of water used by two families for one year

Flow

1 cubic foot per
second(cfs).....= 448.83 gallons per minute (gpm) = 0.028317 cubic meters/sec (m^3/s)
.....= 646,317 gallons per day (gal/day) = 1.70 cubic meters/min
.....= 1.98 AF/day = 2446.6 cubic meters/day

1,000 gallons per
minute(gpm) .....= 2.23 cubic feet per second (cfs) = 0.063 cubic meters/sec (m^3/s)
.....= 4.42 AF/day = 5452.6 cubic meters/day
.....= 11,613.01 AF/year = 1.99 million cubic meters/yr

1 million gallons per
day (mgd) .....=3.07 AF/day =3785 cubic meters/day
.....=1,120.14 AF/year =1.38 million cubic meters/yr.

Concentration

.....1.0 milligrams per liter (mg/L) = 1.0 parts per million (ppm)

.....1.0 micrograms per liter (µg/L) = 1.0 parts per billion (ppb)

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* U.S. gallons
** Exact Value
*** An acre foot covers one acre of land one foot deep
**** This is a billing unit of DWP

APPENDIX J
LIST OF ABBREVIATONS

List of Abbreviations

AF	Acre-feet
BOU	Burbank Operable Unit
BTEX	Benzene, tolulene,ethylbenzene,and total xylene
CVWD	Crescenta Valley Water District
Cal-EPA	California Environmental Protection Agency
DCA	Dichloroethane
DCE	Dichloroethylene
DHS	California Department of Health Services
DTSC	California Department of Toxic Substances Control
DWP	Department of Water and Power (see also LADWP)
EPA	Environmental Protection Agency (see also USEPA)
EVWRP	East Valley Water Recycling Project
LAFD	Los Angeles Fire Department
GAC	Granular Activated Carbon
gpm	Gallons Per Minute
LACDPW	Los Angeles County Department of Public Works
LADWP	Los Angeles Department of Water and Power
MCL	Maximum Contaminant Level
mg/L	Milligrams per Liter
MTA	Metropolitan Transportation Authority
MWD	Metropolitan Water District
OEHHA	Office of Environmental Health Hazard Assessment
OU	Operable Unit
PCE	Tetrachloroethylene
PHG	Public Health Goal
PSDS	Private Sewage Disposal Systems
RAW	Removal Action Workplan
RI	Remedial Investigation
RWQCB	Regional Water Quality Control Board
SFB	San Fernando Basin
SUSMP	Standard Urban Stormwater Mitigation Plan
SWCRB	State Water Resouces Control Board
SWAT	Solid Waste Assessment Test
TCA	1,1,1- Trichloroethane
TCE	Trichloroethylene
TDS	Total Dissolved Solids
ug/L	Micrograms per Liter
ULARA	Upper Los Angeles River Area
UST	Underground Storage Tank
VOC	Volatile Organic Compound
VPWTP	Glendale-Verdugo Park Water Treatment Plant
USGS	United States Geological Survey